

THE ILLUSTRATED LONDON NEWS



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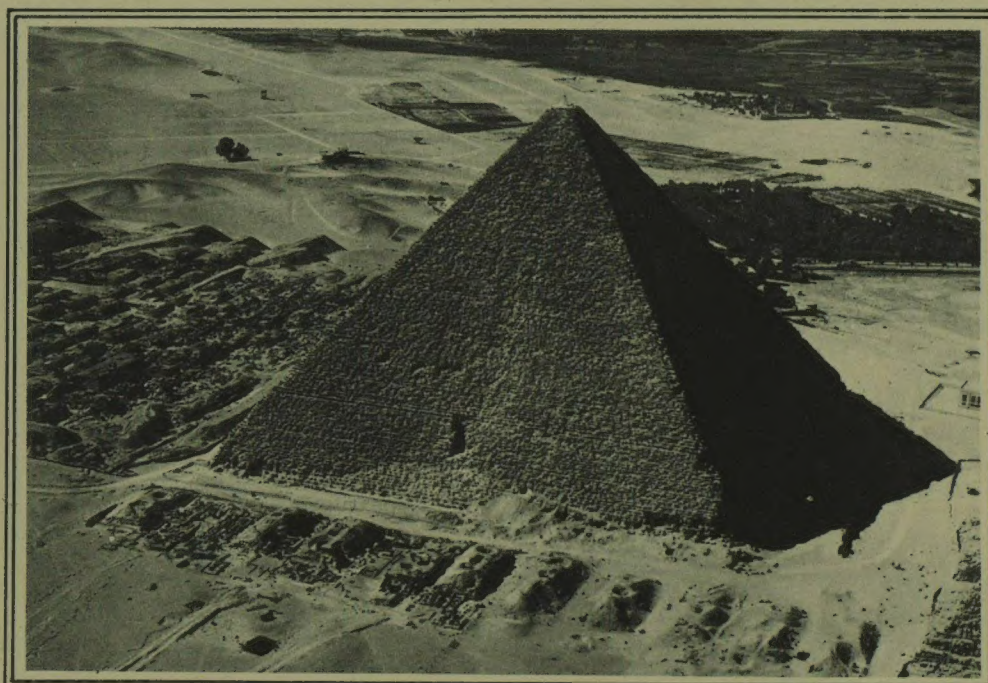
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SATURDAY, SEPTEMBER 22, 1928.

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THE PRINCE'S STYLE—
TOP OF SWING.



THE PRINCE'S STYLE—
FINISH OF SWING.

THE SCENE OF THE PRINCE OF WALES'S GOLF EXPLOIT ON THE GREAT PYRAMID: A DRIVE FROM THE SUMMIT,
(BELOW) AN AIR PHOTOGRAPH OF THE GREAT PYRAMID, SHOWING THE FLAT TOP.

While at Cairo recently, on their way to East Africa, the Prince of Wales and the Duke of Gloucester visited the Pyramids, on September 14, and climbed to the top of the Great Pyramid, known as that of Cheops (or Khufu). Curiosity was aroused among spectators by the fact that a guide accompanying them carried golf clubs and a small bag of mud. Arrived on the stone platform at the top, the Prince carefully made a tee with the mud, and asked which was the most

difficult direction. He drove off against the wind, the ball travelling a great distance. At the Prince's request, his guide and another Bedu raced down the Great Pyramid, across the intervening space, and climbed to the top of the second Pyramid. The Prince timed them, and they took eight minutes. Our photographs, taken on other occasions, show the scene of the Prince's feat and his driving style as seen when he was playing at St. Andrews.



By G. K. CHESTERTON.

TWO books about Charles Dickens have recently appeared, and been much discussed; one is an appreciation which takes the form of a biography, and the other an attack which takes the form of a novel. It is only necessary to say here that Mr. Straus's biography is an admirably just summary of the facts; and that the novel is certainly an exercise in fiction. It is simply a romance about Dickens; and the writer is none the less romancing because he chooses to turn Dickens into a romantic villain instead of a romantic hero. Whether there is much advantage in these arbitrary and inevitably irresponsible revivals of the old historical novel may be questioned. But it is certain that many novelists are now doing it about many more or less modern characters, and that almost any novelist might do it about almost any character. Harrison Ainsworth could do what he liked with Henry the Eighth, and Mr. Bechofer Roberts can do what he likes with Charles Dickens. Both are historical novelists, and neither is historical. But why anybody should specially wish to put so much bitterness into the version of a Victorian personality, with a family still living to testify to the affection he really inspired, I cannot imagine. The historical novelist, being a novelist, cannot be prevented from talking any sort of scandal about Queen Elizabeth; but we generally talk it with a little less excitement. The important point to realise, however, is that there has now come into fashion a new sort of novel with a purpose, which seems to be a purely personal purpose, and a rather trivial and mischievous purpose. A novelist does not write a novel merely in order to unmask his own villain, and a historian hardly writes a history merely in order to belittle a great man. But the new hybrid form or type of writing is irresponsible and can do anything.

I confess that the first thought that flashed across my mind in the matter was a memory of Leigh Hunt, alias Harold Skimpole. There have lately been one or two books about Leigh Hunt, and a large number of reviews of these books. An excellent critical study by Mr. Brimley Johnson, along with other studies of the sort, led to something like a public rehabilitation of Leigh Hunt. It was pointed out that Skimpole was quite incapable of the acts of Leigh Hunt; for instance, incapable of defying tyrants out of the pure love of liberty and going to prison for his political courage. It was also pointed out that Leigh Hunt was incapable of the acts of Skimpole, incapable of betraying a poor little gutter-boy to his pursuers for a tip of half-a-crown. It is quite true that Leigh Hunt was incapable of the actions of Skimpole. It is equally true that Skimpole was incapable of the actions of Skimpole. Even the character as drawn by Dickens had to be blackened and even blotted out by Dickens, before it could be used for these purposes in the Dickensian romance. Dickens had not originally described Skimpole as a plotter, or anything resembling a plotter. He set him plotting merely to assist the plot. Now the moral of that incident is that this compound of the caprice of fiction and the responsibility of biography is an impossible and even intolerable compound. Dickens at least was happier than the latest critic of Dickens. For Dickens realised that he had blundered.

Anyhow, it might be said in this sense that Leigh Hunt is avenged. Somebody has done to Dickens very much what Dickens did to Leigh Hunt. The process is pretty simple. It consists of describing a man with all the notorious weaknesses which he did have; arbitrarily adding to them all the deeper and darker weaknesses which he did not have; and then suggesting that this is going deeper than the surface. The picture of Dickens is about as just to Dickens as the picture of a creeping police informer is just to Leigh Hunt. But the process itself is easy enough. It simply consists in suggesting that certain superficial faults went much deeper than they did, or much deeper than anybody can know that they did. Every man has a hundred aspects; every man can be the model of a hundred portraits; every man may have on occasion the appearance of being a hundred men. The artist avowedly deals with the aspect, with the

was true of Dickens, because it is a thing that happens to very few. We commonly talk, for convenience, of any politician or prominent man of affairs as a public man. But to be really a public man it is necessary incidentally to be a man. The politician or plutocrat may sometimes be called a public institution. He may sometimes be called a public nuisance. Sometimes he amounts to no more than a sort of popular rumour. But it was the complete humanity of Dickens that was public property; sometimes too public and yet, as the philosopher said, all too human. Even among the great Victorians this sort of intimate greatness was unachieved. Men knew the economics of Cobden or the foreign policy of Palmerston, but not the living men and their full view of life. But Dickens did, in the phrase too cheaply used, put his heart into his work. He lived in his characters and in the crowds that enjoyed his characters. There were a great many misfortunes arising from this vast and yet familiar public life; and one of them was that he made rather a mess of his private life. To the merits of such a muddle no man can do justice who has not actually known the persons, heard the voices, and seen the very gestures; and it does not seem to me a sufficient substitute that somebody who has not seen them should make them up. But I am pretty sure that that amazing popularity was the fountain of all the follies. Dickens suffered from a sort of premature Big Business, though the term is unworthy of him at his worst, since it was the business of making things and not of buying and selling them. But he did set himself far too much to be a sort of Universal Provider; to keep a huge factory of fiction roaring night and day; to "keep in touch" with his public like a big business with its customers. From this came the sort of errors really to be imputed to him; such as that which Mr. Straus rightly calls the stupidest act of Dickens's life—his attempt to justify himself in print over the affair of the separation. He was thinking of his thousands of readers, but imaginatively and not merely meanly. He felt what a shock it would be at a thousand firesides to think that the great prophet of hearth and home had himself become a castaway. If he had thought more about one fireside, and less about a thousand, he would have been a happier man.

But he was not a hollow man, or a false man, or a corrupt and cruel man; and anybody who suggests that he was is talking sensational nonsense. And there is just one thing to be added to our appreciation of his real strength and weakness. Nobody else has been thus intoxicated by such fame, simply because nobody else has achieved such fame.

There has never been a popular author since Dickens. There have been best-sellers who were read and despised, and famous authors who were respected and not read. But Dickens really was an author, in the sense of a creator. And Dickens really was famous, not like Mr. Osbert Sitwell, but like Napoleon. And considering that our literary men do sometimes show faint signs of self-approval, even as it is, we might admit in charity and common-sense that God alone knows what they might be like if they had ever drunk as Dickens drank of the cup of the glory of this world.



THE ROBOT ENTERS PUBLIC LIFE: A MECHANICAL MAN OPENS THE MODEL ENGINEERING EXHIBITION, RISING FROM THE CHAIR AND MAKING A "SPEECH."

The Robot man, actuated by electrical mechanism and with a "loud-speaker-like" voice, was the prime wonder at the Model Engineering Exhibition, which he declared open in a "speech" at the Royal Horticultural Hall on September 15. He rose, gesticulated and bowed, flashed his eyes, and emitted electric sparks from his teeth. Beside him stood his sponsor, Captain Richards. The internal economy of this Robot, a delicate mechanical system, was illustrated in our last issue. It may be noted that another Robot has recently been seen at Maskelyne's Theatre.

portrait he is to paint—not the personality God is to judge. The critic or biographer must make some attempt at judgment; though it will be well if he also distinguishes between his judgment and the Day of Judgment. But by mixing up all these things we get possibilities of caricature that amount to mere anarchy. That is what I mean by saying that Dickens discovered his blunder, if only too late. He realised that he could not be at once the creator of Skimpole and the critic of Leigh Hunt. But the new caricature of Dickens is not simply a Dickens caricature; the character is again sacrificed to the plot and to the plotter.

There was nothing the matter with Dickens, except that while he was still a very young man, a vain and not very well-educated young man, he became something unique and universal. He became, in a sense that was special, actual, and even awful, a public man. Few realise the sense in which this

HAPPENINGS AT HOME AND ABROAD: INTERESTING EVENTS AND OCCASIONS.



THE BRITISH PILGRIMAGE TO WAR GRAVES IN GALLIPOLI: A PARTY COMING ASHORE AT ANZAC COVE, THE SCENE OF THE HEROIC LANDING.

Two hundred and forty-seven British pilgrims recently visited the graves of their relatives and friends in Gallipoli, under the auspices of the St. Barnabas Pilgrimage. By permission of the Turkish authorities they were allowed to land from small boats at Anzac Cove, where the Dominion troops did such deeds of heroism. With the pilgrims was Lord Stopford, of the Imperial War Graves Commission.



THE CHAIRMAN OF IMPERIAL AIRWAYS MAKES HOLIDAY BY AIR: SIR ERIC GEDDES (FOURTH FROM RIGHT) WITH HIS BROTHER, SIR AUCKLAND GEDDES, AT SOUTHAMPTON. Sir Eric Geddes, Chairman of Imperial Airways, and his brother, Sir Auckland Geddes, formerly British Ambassador to the United States, are here seen about to set off for a holiday flight to Scotland, in the Imperial Airways flying-boat "Calcutta," shown in the background. In this machine Sir Eric Geddes recently flew to the Channel Islands.



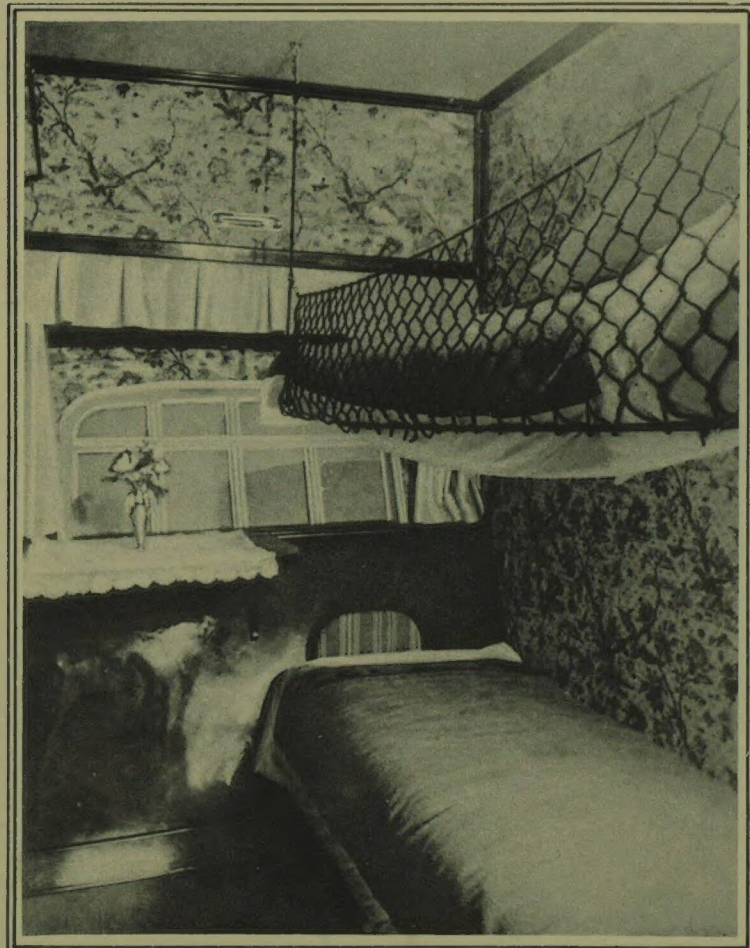
ASCENDING BRITAIN'S HIGHEST MOUNTAIN BY CAR: AN EDINBURGH MOTORIST POISED AT AN UNCOMFORTABLE ANGLE ON THE SLOPES OF BEN NEVIS.

Mr. Henry Alexander, of Edinburgh, subjected his Ford car to an unusual test on September 13, when he drove it up the bridge path on the western slopes of Ben Nevis, through stones a foot across, over ruts a foot deep, and round numerous sharp corners. He started at 10.40 a.m., and reached the summit at 8 p.m., in spite of axle trouble, the car having to be pushed over some

(Continued opposite.)



ON THE CAR ASCENT OF BEN NEVIS, WHEN ONE OF THE PACK HORSES WAS KILLED BY FALLING INTO A RAVINE: A HORSE CARRYING A "SPARE." of the steeper parts. Horses accompanied him with spares and provisions, and one of them slipped in a steep part and was killed, falling into a glen hundreds of feet below. The ascent was dangerous, and only skilful driving on the narrow path prevented a similar disaster to the car. Ben Nevis, which is 4406 ft., is the highest mountain in Great Britain.



THE REVIVAL OF GERMAN AIRSHIP-BUILDING: A DOUBLE SLEEPING-CABIN IN THE NEW DIRIGIBLE "COUNT ZEPPELIN."

When the once-thriving airship industry at Friedrichshafen threatened to close down after the war, Dr. Eckener took control, and a national subscription was opened which brought in some £100,000. Of this effort the "Count Zeppelin," designed to carry twenty passengers in considerable comfort, and fifteen tons of freight, is the first product; she is the largest Zeppelin ever con-



LOOKING AS COMFORTABLE AS AN HOTEL: THE WELL-APPOINTED SALOON OF THE NEW GERMAN AIRSHIP "COUNT ZEPPELIN."

structed. Dr. Eckener hopes eventually to establish a Transatlantic service on a commercial basis. Up to the time of writing, however, the shortage in a special new non-inflammable gas fuel, and the difficulties in obtaining the German Air Ministry's certificate of "air worthiness," have delayed the start. It was stated that she would leave on September 17.

ANIMAL TRAGEDIES OF THE LORIAN SWAMP: A DEADLY DROUGHT.



1. THIRST-MADDENED ELEPHANTS THAT KILLED CHILDREN, A CAMEL, AND A GOAT: THE ANIMALS SEARCHING FOR WATER IN THE LORIAN SWAMP, THE 8-FT. HIGH PAPYRUS HAVING BEEN EATEN DOWN.



2. A "REMOVAL" NEAR THE LORIAN SWAMP: OGADEN SOMALIS WITH A PACK OX CARRYING HOUSEHOLD EFFECTS TO A NEW GRAZING GROUND.



3. THE DEVASTATING EFFECT OF DROUGHT ON THE TEEMING LIFE OF EAST AFRICAN INLAND WATERS: HIPPOPOTAMUS AND MASSES OF DEAD FISH IN ONE OF THE FEW REMAINING POOLS OF MUD—SHOWING MEN CUTTING UP A "HIPPO" IN THE BACKGROUND.



4. A HIPPOPOTAMUS THAT PREFERRED TO LIVE ON DRY LAND, IN SPITE OF THE DROUGHT, OWING TO A LARGE SORE IN HIS FLANK (SEE THE SAME ANIMAL IN No. 5).



5. SHOWING THE SORE ON HIS FLANK THAT MADE HIM PREFER DRY LAND: THE "HIPPO" SHOWN IN No. 4 LOOKING DOWN AT HIS FELLOWS IN THE WATER.

The Lorian Swamp, on the borders of the Northern Frontier Province of Kenya and Jubaland (in Italian East Africa), has hitherto remained largely a mystery, as far as geography was concerned, in spite of the visits of several white men. Recently, however, a British officer, who has sent us these interesting photographs, arrived there during a severe drought, and many secrets of the swamp were thereby revealed to him. The swamp is one of the largest individual morasses

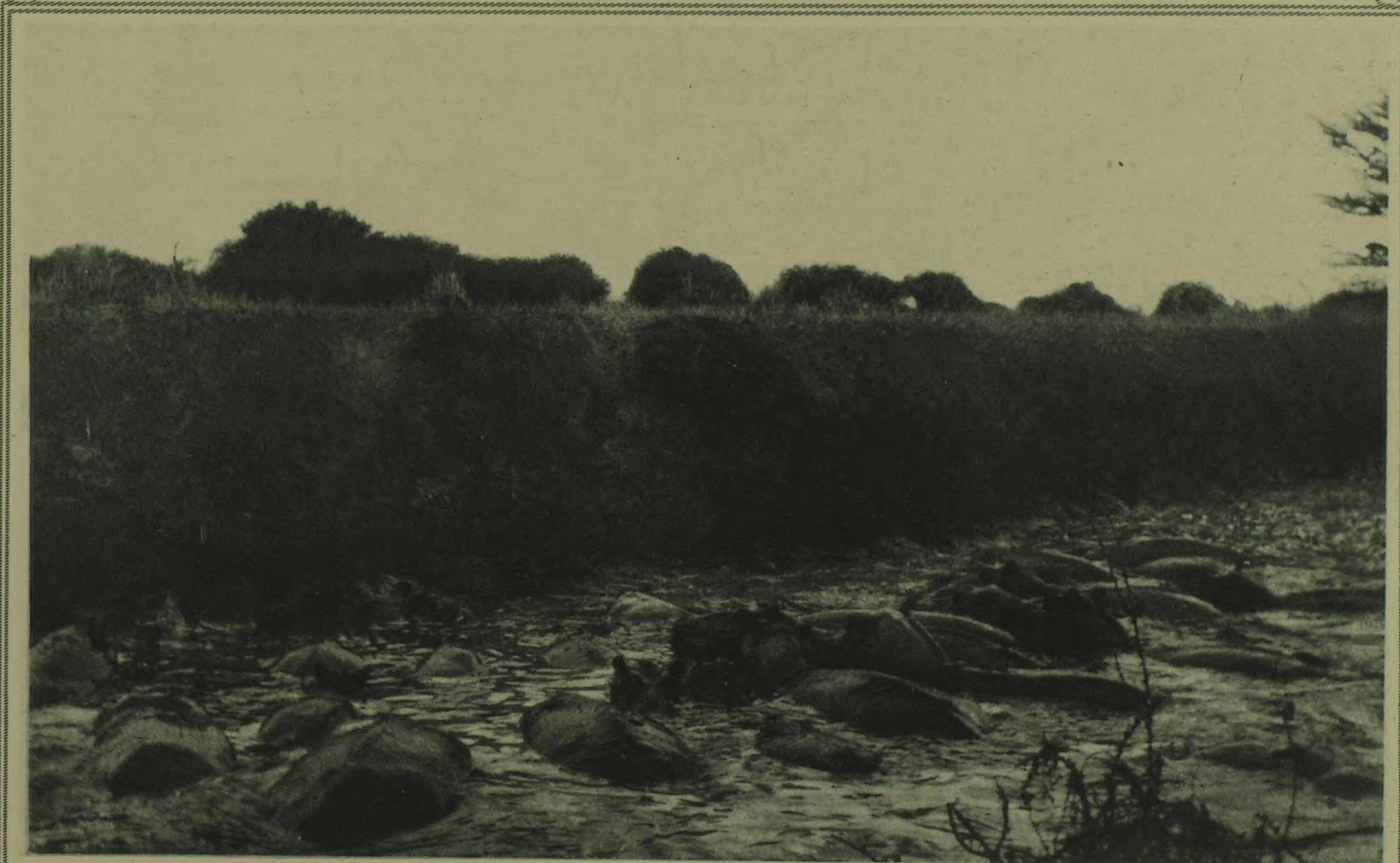
in Africa. The elephants shown above in Photograph No. 1 only visited it temporarily in search of water; although there is a native legend which says that it is to this place that old elephants come to die. The herd seen in our illustration (No. 1) hung round the swamp two days seeking water, and the photograph shows how the papyrus, usually 8 ft. high, has been eaten down, thus increasing the visibility. Our contributor writes that "the infuriated elephants became a danger,

[Continued opposite.

WHAT DROUGHT MEANS IN TROPICAL AFRICA: FISH DIE BY MYRIADS.



6. A NATURAL COUNTERPART OF ONE OF THE PLAGUES OF EGYPT: A CHANNEL IN THE LORIAN SWAMP, COMPLETELY CHOKED BY MYRIADS OF DEAD AND DECAYING FISH—THE CAUSE OF AN INTOLERABLE "AROMA," INTENSIFIED BY THE REMAINS OF AN ELEPHANT AND A "HIPPO" CLOSE BY (NOT SEEN IN THE PHOTOGRAPH).



7. EFFECTS OF A DROUGHT WHICH PROVED A BOON TO GEOGRAPHY, BY OPENING-UP THE HITHERTO IMPENETRABLE LORIAN SWAMP, BUT A CALAMITY TO ANIMAL LIFE: HIPPOPOTAMUS MASSED IN A MUD POOL (ONE OF THE FEW NOT DRIED UP)—ANOTHER VIEW OF THE SCENE SHOWN IN No. 3 ON THE OPPOSITE PAGE.

Continued.]

several children herding goats being killed. One day a camel was killed a hundred yards from the camp, while on another occasion we were able to witness a goat being killed, the elephant using its tusks to prod the animal to death." The lone hippopotamus shown in Nos. 4 and 5 also grew bad-tempered with the drought, and with the sore in his flank. "Some two weeks later," we read, "he was forced to leave the pool and attacked the *manyatta*, or village,

of a Sheikh two miles off, where he entered the huts. He was eventually driven outside and speared." As the photographs show, the fish in the swamp died by myriads, owing to insufficiency of water, and the channels and pools were choked with their decaying bodies. A very interesting book on this region is Captain C. W. Haywood's "To the Mysterious Lorian Swamp" (Seeley Service), describing an adventurous pioneer journey of exploration.

The Scientific Side of the Detection of Crime.

No. XIV.—THE POLICE EXPERTS AND ART FRAUDS.*

By H. ASHTON-WOLFE, Assistant Investigator under Dr. Georges Bérout, Director of the Marseilles Scientific Police Laboratories.

ART frauds belong to a category in criminal records which has not received the wide publicity the more crude burglaries, forgeries, and confidence tricks have obtained; although they generally aim high, demand great natural aptitude and specialised knowledge, and, when successful, defraud the victims of considerable sums. The reasons for this conspiracy of silence are easily understood. Until lately only a few highly paid connoisseurs were able in exceptional cases to determine whether a fraud had been committed; and such experts, since they relied only on the carefully acquired experience of the senses, were often led astray by their personal tastes and dogmatic conceptions, and their reports were usually inconclusive. Furthermore, the dupe—in most cases—preferred not to advertise his own incompetence by a public prosecution.

But the frauds committed every year by means of faked paintings, clever copies of statuary, or adroit imitations of ancient manuscripts—and even the manufacture of prehistoric discoveries of bones, weapons, and inscribed tablets, have become so numerous that the police laboratories, and more especially those at the Paris Sûreté, have finally been entrusted with the task of evolving scientific methods whereby it can be infallibly determined whether a work of art, a prehistoric excavation, or an object purporting to be a relic from a past civilisation, is authentic, without relying in the least upon the specialised knowledge of the *savant*. This step might have been taken long ago, for it is obvious that the methods utilised for detecting forged wills or bank drafts can be equally well applied to ancient or modern manuscripts; and the work of the painter and sculptor has as many personal qualities and idiosyncrasies as that of the burglar when he handles file, jemmy, or blow-pipe. The microscope and chemical analysis can immediately ascertain the age and composition of doubtful Phœnician trinkets or prehistoric pottery.

Everyone has probably heard of the notorious Glazel controversy, so that I need but recall the main facts. A family of peasants, in a hamlet not far from Vichy, abruptly announced that they had discovered flint and bone weapons, pottery, funeral urns, and, above all, a number of stone tablets which bore, chiselled in their polished surface, inscriptions in an unknown language. The importance

came from all parts of the world to inspect these tablets. Naturally, many were sceptical and pronounced them to be frauds; others declared them to be genuine. Books and pamphlets were printed by the dozen, and the newspapers in every land gave first one and then another version as the expert commissions made their reports. Finally, since the money earned by the museum brought the whole matter within the province of fraud if the exhibits were faked, the police suddenly and unexpectedly raided the place and seized a number of objects. It is also alleged that the unknown but contemporary carver of the tablets knew so well that file-marks would be detected by the microscope that he had cleverly manufactured tools of flint and toughened glass, and that some of these were found by the police.

A number of the Glazel tablets (*e.g.*, Fig. 8, opposite page) have been sent to M. Bayle, the Chief of the Paris laboratories, and his report will prove definitely whether they are authentic or not. Until then the matter must remain *sub judice*.

A similar case was that of La Glaizière. This was proved beyond doubt to have been a clever fraud, because finger-prints were found impressed in baked clay pottery which could only have been left recently, for their type was quite modern. It is perhaps not generally known that the lines and spirals which I have described in my article on finger-prints have developed and become more complex since the days of primitive and simian mankind. The fingertips of the anthropoid ape have no loops or spirals, but merely a series of slightly curved perpendicular lines (Fig. 6). In prehistoric man these lines had become simple loops; it is only the more civilised races who have the complicated designs now familiar to everyone (Fig. 7).

Although many vestiges of prehistoric finger-prints have been examined, none of them has ever differed from the simplex curve type. Thus the presence of complex finger-prints on objects supposed to be prehistoric proves them to be frauds. There are also a number of chemical tests and micrographic and spectrographic methods which can determine conclusively the age of an object. Furthermore, its fluorescence when exposed to ultraviolet rays is so characteristic in every case that a mistake is impossible—a fake is at once revealed, no matter what artificial ageing process has been used.

A very famous piece of statuary was bought not long ago by a clever trickster, and the sale widely advertised. This fellow was extraordinarily gifted. He set to work and produced a series of perfect copies from the original, complete in every detail, and with the artist's signature. He then sold each copy privately in various countries as the authentic work of the artist. Finally, he also sold the original for a sum equal to that which he had paid for it. It

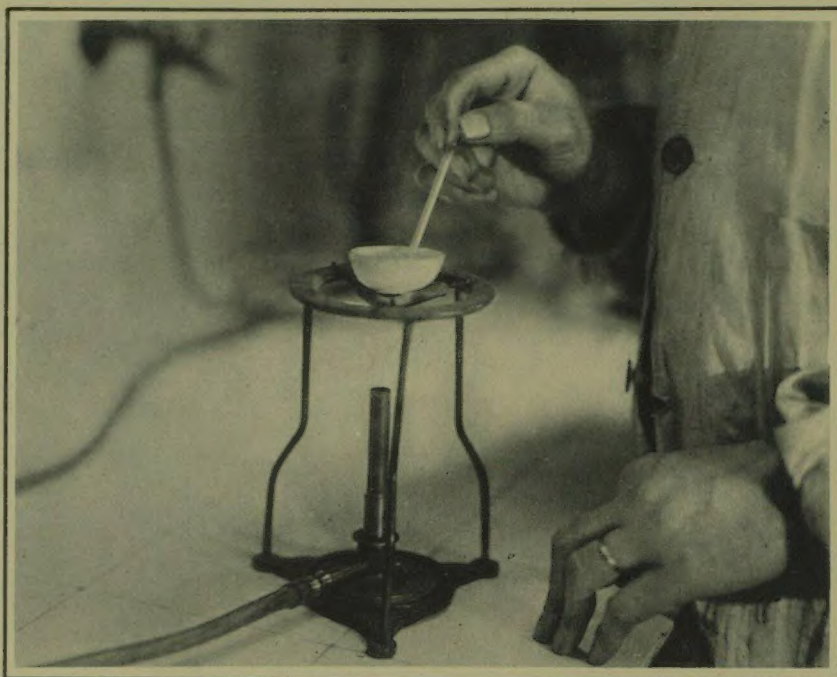


FIG. 1.—A METHOD USED IN DETECTING "FAKED" FIRST EDITIONS OF VOLTAIRE, ROUSSEAU, AND BALZAC: PREPARING A CHEMICAL SOLUTION OF INK FOR ANALYSIS IN A POLICE LABORATORY.

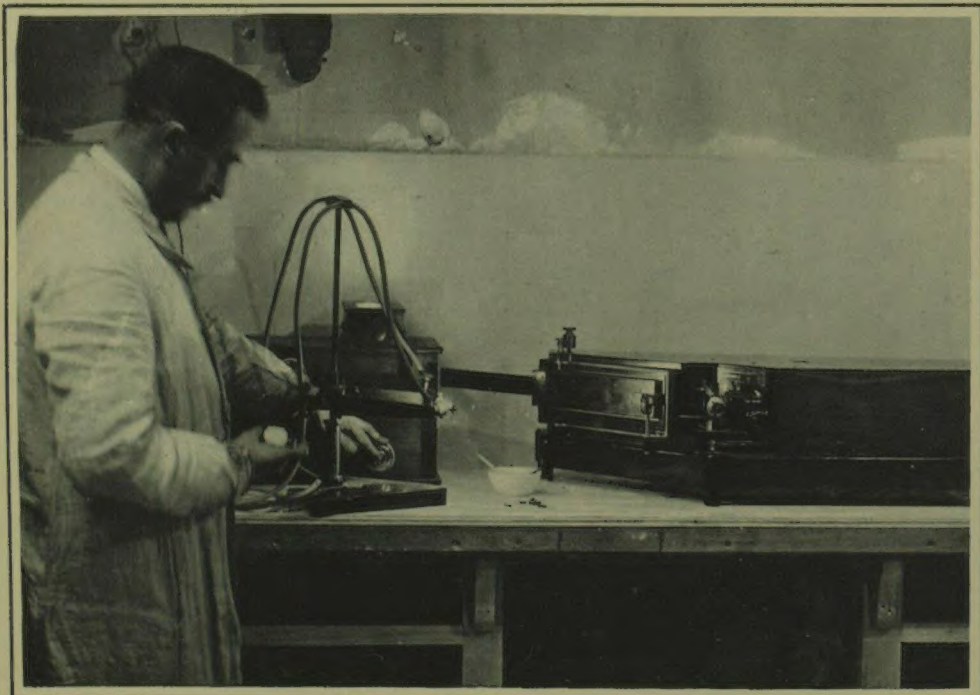


FIG. 2.—HOW A "FAKED" COPY OF A VALUABLE PICTURE WAS DISCOVERED IN THE CASE OF A RECENT FIRE INSURANCE FRAUD: A POLICE TEST OF THE COMPOSITION OF PAINT MADE WITH THE SPECTROGRAPH.

of this discovery—if authentic—was that it proved man of the Stone Age to have been already skilled in the use of the written word. The owner of the land where these treasures had been unearthed installed them in a barn, and charged for admission to his improvised museum. Archaeologists and *savants*

was quite by chance that one of his dupes happened to see a duplicate of his own statue in a shop. He naturally enquired whence it had come, and was informed that it had been sold under the hammer at the death of the owner. The shopkeeper averred that it was the original, but, after a heated argument, consented to go to the man's house to examine his statue. The visit was unsatisfactory, and even the merchant, who was an expert, was unable to determine which of the two was a copy. The police were then informed, and their investigation brought to light six more "originals." The man from whom they had been bought was, of course, arrested. Microphotographs under mercury-vapour illumination were made of the signatures, and of a spot specially chosen on each statue. Thus at last the original was discovered by the minute but characteristic chisel-lines, which were compared with those on other authentic productions by the same artist. These lines, invisible to the eye, and even under the microscope in ordinary light, were absent on the copies. It was the only conclusive proof obtained, for the signatures were perfectly imitated.

The photographs (Figs. 3, 4, and 5 on the opposite page) show another statue which has been copied for the purpose of demonstration. The difference in the texture of the leg is very apparent. It has been suggested that, in future, artists should apply at the police laboratories for a chart of identity, on which would be affixed an enlarged photograph of their characteristic manner of working. A similar chart would be classified under their name with a duplicate photograph. It would thus be a simple matter for any one to ascertain whether he had truly bought the original by applying for a test photograph, to be compared with that on the chart. No mistake could then occur, since it has been definitely proved that to imitate the microscopic lines and scratches on the surface would be more difficult by far than the most complex forgery.

A case occurred recently which, but for the laboratory experts, would have cost a great British firm of underwriters a huge sum of money. A painting, purporting to be by a famous Italian artist of the Primitive school, was insured for a very large amount. Art experts nominated by the insurance company examined the painting, and their reports stated that it was indeed by the great Italian artist,

SCIENTIFIC DETECTION: TESTS FOR "FAKES" IN ART AND ANTIQUES.

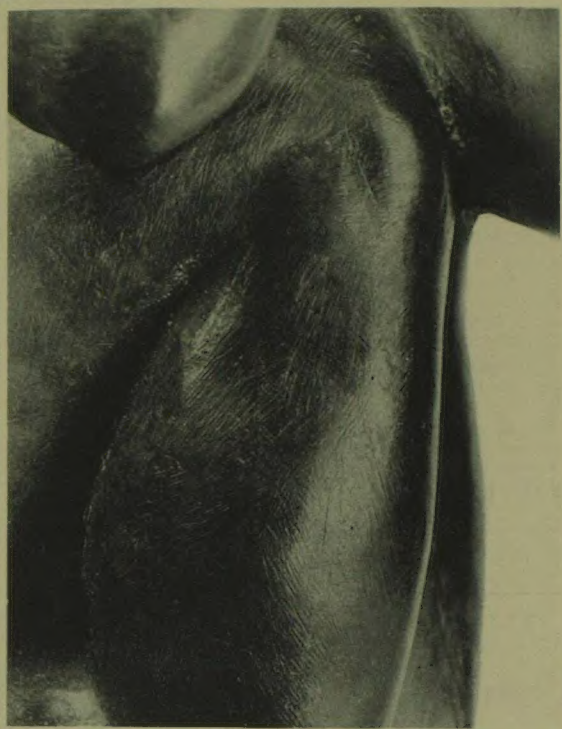


FIG. 3. SHOWING THE MINUTE MARKS OF THE ORIGINAL SCULPTOR'S CHISEL: THE LEG OF THE AUTHENTIC STATUE SHOWN IN FIG. 4 (ENLARGED).



FIG. 4. THE STATUE FROM WHICH THE PHOTOGRAPH IN FIG. 3 WAS TAKEN: A WORK USED FOR DEMONSTRATION.



FIG. 5. LACKING CHISEL-MARKS (AS IN FIG. 3) AND THUS PROVED NOT THE ORIGINAL: THE LEG OF A COPY OF THE STATUE SEEN IN FIG. 4.

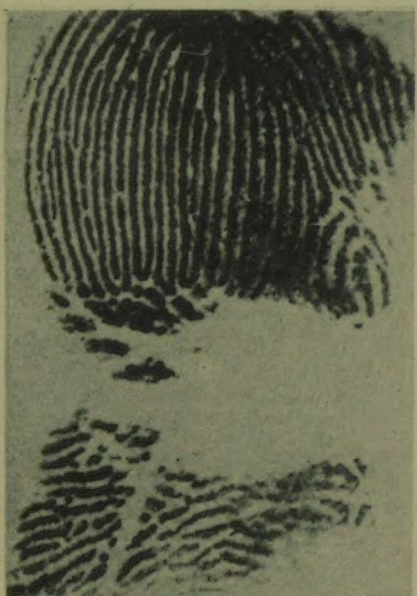


FIG. 6. LIKE A PREHISTORIC HUMAN FINGER-PRINT: THAT OF A MONKEY, WITH CURVED PERPENDICULAR LINES.



FIG. 7. AS ON ALLEGED PREHISTORIC POTTERY, PROVING IT A "FAKE": A MODERN HUMAN FINGER-PRINT.

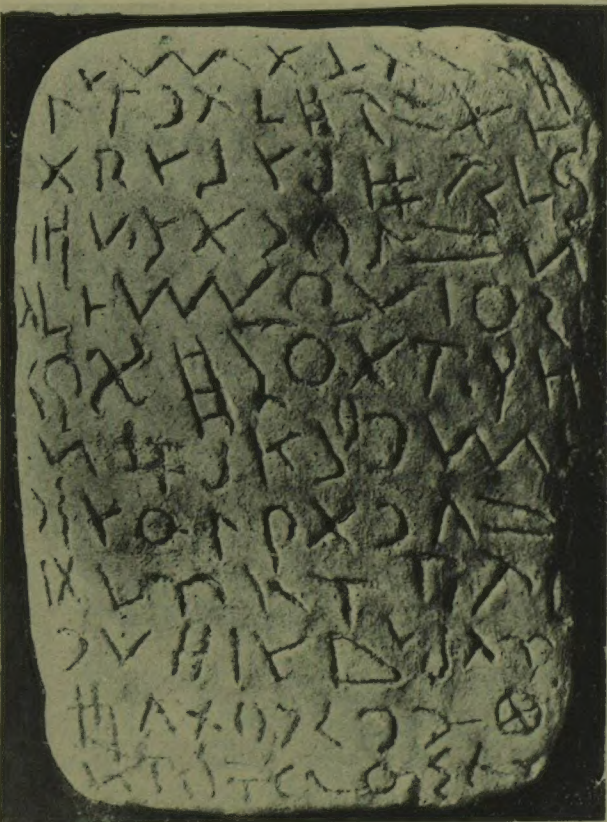


FIG. 8. THE FAMOUS GLOZEL "FINDS" OF SUPPOSED STONE AGE WRITING: ONE OF THE INCISED TABLETS SENT TO BE TESTED AT THE PARIS POLICE LABORATORIES.



FIG. 9. MEANS OF DETECTING FORGERY IN POSTAGE STAMPS: STRIPS OF A FORGED STAMP (B,B) SUPERPOSED ON A GENUINE STAMP (A,A) SHOWING THAT THE EDGES AND LETTERING DO NOT CORRESPOND.

These photographs, numbered to correspond with references in Mr. Ashton-Wolfe's article on the opposite page, illustrate several cases of proved or suspected fraud in "faking" or copying works of art and antiques, which he describes. Thus, Figs. 3, 4, and 5 show the method used in detecting the trick practised by a man who bought a famous piece of statuary and sold a number of copies as the original in various countries. The statue illustrated is another one, copied for the purposes of demonstrating the method. Enlarged photographs from the original show the sculptor's chisel-marks, whereas those from the copy do not. Figs. 6 and 7 illustrate the difference between genuine prehistoric human finger-prints, which are much the same of those of an anthropoid ape (Fig. 6), and those of the more complex modern type. This difference proved that certain alleged ancient pottery was "faked," because it bore modern finger-prints. The famous Glozel case, as Mr. Ashton-Wolfe points out, is still *sub judice*, but some of the incised tablets said to bear Stone Age writing have been submitted to the chief of the Paris laboratories for testing. "The police laboratories," writes Mr. Ashton-Wolfe, "and more especially those at the Paris Sûreté, have been entrusted with the task of evolving scientific methods whereby it can be infallibly determined whether a work of art, a prehistoric excavation, or an object purporting to be a relic from a past civilisation, is really authentic, without relying in the least on the specialised knowledge of the savant."

BOOKS OF THE DAY.

SCIENCE has always been for me an unfathomable mystery, as regards its procedure and its phraseology. That is because, during the years when I was undergoing the process known as "education," the only scientific item on the programme was a weekly class in chemistry for one term at school. The effect was far from permanent, and the only thing I remember about it is that it enabled another boy and myself to manufacture some home-made matches. The experiment, I believe, took place in my study, and we became in consequence exceedingly unpopular, owing to the terrific smell of sulphur which permeated the whole house.

That disturbing incident, however, did not shake my faith in exact knowledge based on verifiable evidence. Moreover, the fact that the prophecies of science, concerning eclipses and so on, have a way of coming true, punctually to the minute, tends to fortify one's general confidence in its conclusions. "Science," I take it, is not so much a creed as a method. While it has accumulated a certain body of ascertained fact, it is not a rigid or static system of doctrine, and does not pretend to have reached finality. It cannot, therefore, be accused of inconsistency for being open to conviction and ready to modify its views in face of fresh testimony. Such changes are in the essence of its outlook on life. The British Association, we may remember, which recently held its annual conference, exists for the "advancement" of science. It does not, in Sir William Watson's phrase, "recline upon achievement."

Sir William Bragg, whose fine presidential address at Glasgow on "Craftsmanship and Science," aroused so much interest, figures prominently, as might be expected, in a book called "MODERN CONCEPTIONS OF ELECTRICITY." A lucid Explanation of Many of the latest Theories concerning Atoms, Electrons, and other Matters relating to Electricity. By Charles R. Gibson, LL.D., F.R.S.E. Illustrated (Seeley, Service; 12s. 6d.). The statement that Sir William "figures prominently" is no mere metaphor, as his portrait forms the frontispiece, accompanied by a note recalling that he, "along with his son, has done the pioneer work in obtaining X-ray spectra of crystals, by means of which their structure has been determined." Thus stated, the exploit does not seem very startling, and this restrained manner of exposition is rather characteristic of the book. The author does not indulge in superlatives to describe the marvels of science, but relies for impressiveness on a plain record of experiments and discoveries, some of them sufficiently astonishing.

Putting the question, for example, how many molecules there would be in a row measuring one inch, he says: "The answer is 500 million molecules. A row of the same number of dried peas would extend to 2250 miles. . . . And yet the molecule is large compared with the atoms of which it is composed, while these atoms are giants compared with the electrons. . . . Even the electron is large compared

Another passage gives a human touch to the early experiments in photography. Daguerre (the inventor of the old *daguerrotype*) had been making very long exposures, when one day the sun was darkened just after he had begun, and he put the plate away in a cupboard. When he took it out next day, he found a picture infinitely better than his previous results. Thereupon he shouted with joy: "I have seized the light! I have arrested his flight! The Sun himself in future shall draw my pictures!" A "momentous" moment, indeed, for the illustrated papers.

The word "electricity," Mr. Gibson recalls, was coined by Dr. William Gilbert, Court physician to Queen Elizabeth, from the Greek word *electron* (amber), because, about 600 B.C., "the ancient philosophers commenced man's knowledge of electricity by rubbing pieces of amber and causing them to attract light bodies." Mention is made also of the strange fact that, although we can use its power to light our homes and drive our trains, "we cannot discover what electricity is." I am reminded here of an amusing anecdote in another book I recently reviewed—the late Sir John Kempe's "Reminiscences of an Old Civil Servant." "A professor lecturing on an electrical subject thought one of his listeners was dropping off to sleep. 'Mr. Jones,' he asked, 'what is electricity?' 'Electricity, Sir? I am very sorry: I did know, but unfortunately I have forgotten.' 'Gentlemen,' said the lecturer, 'this is indeed a misfortune for mankind. We have among us one who once knew what electricity is, and he has forgotten!'"

I turn now to a book which in its subject matter is closely akin to Mr. Gibson's, but differs from it considerably in its manner of treatment. A hint of the difference is conveyed, perhaps, in the title—"EXPLORING THE UNIVERSE." The Incredible Discoveries of Recent Science. By Henshaw Ward (Brentano's; 10s. 6d.). In the very name of Mr. Ward's book I discern an example of an art with which, as a journalist, I am not wholly unfamiliar—the gentle art of hitting the reader in the eye. Perusing further, I find it practised throughout the book. Far be it from me to decry that art, for it is the art whereby I live, and, after all, it does help to make a humdrum world a bit more exciting. I like a little colour and flamboyance in a book that seeks to popularise scientific knowledge. It is the jam around the powder, which without it might not be so palatable.

Here, then, is a specimen of Mr. Ward's method, in describing a drop of water. "The chemist tells us about it by naming infinitesimal distances, like one-hundred-millionth of an inch. But no mind can visualise such distances or feel the least interest in them. The only way I can form any picture of the chemist's world is to enlarge it. . . . This I do by supposing that I am on a magic carpet which first takes me to a view of the drop as it would appear if increased fifty times in size . . . then a thousand times larger still, and so on till I have sight of all that science knows. If you care for such a plaything, step aboard." And what of the results? "Thanks to the labours of mathematicians who have never been on magic carpets, we know that electrons are, in our eight-mile molecule, only eight inches in diameter. Pardon me if I remind you what this means in the place where we now are: here, in a sphere almost a hundred million

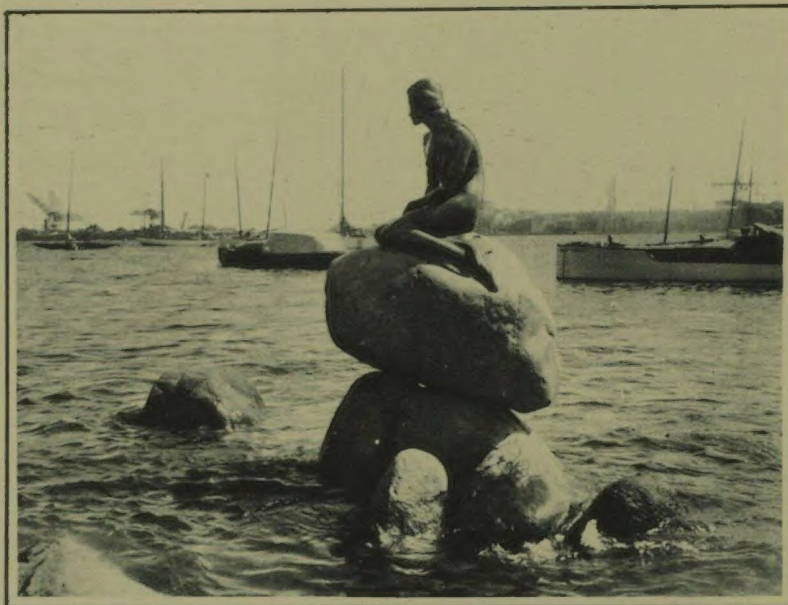
miles in diameter, an electron is only eight inches in diameter. Yet modern science has calculated its size and mass."

Mr. Ward is equally "colourful" about the stupendous distances revealed by astronomy, which, he says, once caused a certain Bishop to renounce his belief, owing to the long cold journey to heaven. Whereupon the author rebukes that prelate of little faith. "Even the reason of a scientist could have told him that heaven may be just round the corner in a fifth dimension and that souls may be able to slip thither in a moment. . . . The only religion that science can destroy is some false and materialistic creed. . . . But science cannot lay a finger upon

a spiritual religion. If

a religion is founded on some revelation to the spirit of man, it will live serenely aloof from all that telescopes and spectroscopes can teach."

At the end of his book Mr. Ward gives a useful bibliography of works for the benefit of readers who wish to take more extended tours on the magic carpet of science, and in the course of it he says: "The atoms have been popularised in dozens of books. My own choice, if I had to recommend only one, would be Sir William Bragg's 'Concerning the Nature of Things,' because in it one of the leading investigators tells, with a charming style, how his work was done." Our own readers will remember that the delightful lectures which



A HANS ANDERSEN HEROINE ON A DANISH ROCK: A BRONZE STATUE OF "THE LITTLE HARBOUR WIFE" AT COPENHAGEN.

This little nymph sitting upon her group of stones lends a touch of fairyland to part of the harbour at Copenhagen. She is the heroine of Hans Andersen's story "The Little Harbour Wife," and the statue is the work of a well-known Danish sculptor.

compose that book were published serially in this paper.

One vital task that still confronts medical science, regarding which much has been heard of late in connection with radio-activity, is discussed from a common-sense point of view in "CANCER, THE SURGEON AND THE RESEARCHER." By J. Ellis Barker. With Introduction by Sir W. Arbuthnot Lane, Bt., F.R.C.S., Consulting Surgeon at Guy's Hospital. (Murray; 7s. 6d.) Though not a doctor, the author has studied deeply the history and prevalence of the disease. He now delivers a trenchant attack on what he calls "the Cancer Research Ring" and "pitiful cancer experts who suffer from incurable bacteriomania." He denies the theory that "cancer is a local disease and can only be cured by operation," and contends that its cause is mainly a matter of diet and unhealthy habits, pointing to "the high cancer mortality among those who consume meat and alcohol in excess," and the "exceedingly low cancer mortality among farmers, schoolmasters, agricultural labourers, clergymen, etc., who live largely on fresh food . . . and take plenty of exercise."

Mr. Barker's previous works on the subject appear to have been roughly handled by some medical writers and praised by others. He frankly quotes both sides. Where doctors differ—and I imagine they would disagree with each other even in a cannibal community—it is not for the lay reviewer to interfere. I may observe, however, as a G. P. of the scribbling profession, that the book contains a good deal of repetition; also that when I asked myself the question—what then must I eat and drink?—I could not find a definite detailed menu. It may be there, but, at any rate, it is not conspicuous, and I have discovered only some general references to the virtues of "a lacto-vegetarian diet."

It is only fair to add that Sir Arbuthnot Lane, while putting in a mollifying word for "the scientific investigators," commends Mr. Barker's book to all medical men and heads of families, and especially to women, seeing that (if one may emend the poet)—

The hand that rocks the saucepan is the hand that rules the world.

Sir Arbuthnot does not express it quite like that, but the idea is there. "Cancer," writes this distinguished surgeon, "is a disease of faulty feeding, not a mysterious disease which can be fathomed only by eminent scientists who have specialised in micro-biology, chemistry, and other sciences. . . . Prevention is an infinitely more important means of dealing with this scourge than operation can ever be. . . . I consider (Mr. Barker's book) to be of very great scientific and of very great practical value." It will, doubtless, provoke acute controversy, but that is all to the good if it stimulates the assault on the last great stronghold of disease, and hastens the day of conquest.

C. E. B.



TOASTING DRAKE IN WATER: FILLING A SIXTEENTH-CENTURY GOBLET FOR THE MAYOR OF PLYMOUTH AT THE FALLS OF BURRATOR RESERVOIR.

At Plymouth the other day, the Mayor, in opening the enlarged reservoir at Burrator, drank a toast of water from its falls "to the pious memory" of Sir Francis Drake, in a sixteenth-century goblet. The photograph shows the goblet being filled for the purpose.

with the proton or positive particle. . . . I have heard it said that the scientist has to take these particles on faith, but we have positive proof of the existence of even electrons and protons. In our imagination we can follow the creation of the physical universe commencing with the ether, but we fail to discover the method used by the Creator in forming the particles of electricity of which the material universe is composed. . . . (We) read in the first chapter of Genesis that, at the very outset of creation, the Creator said, 'Let there be light.' It is interesting to find in this beautiful poetic description the idea of radiation preceding the creation of matter." This reminds me rather of Sir Oliver Lodge's sermon at the Glasgow meeting.

"STONE AGE" FISHERIES STILL IN VOGUE: SPEARS, BASKET-NETS, & CORAL TRAPS.

MEN AND WOMEN FISHERS OF AUA: PRIMITIVE METHODS & STRANGE CATCHES.



1. WITH HIS CATCH ON THE END OF HIS SPEAR: A NATIVE FISHERMAN OF AUA, A PACIFIC ISLAND NEAR NEW GUINEA.



2. SPECTACLED FOR UNDER-WATER WORK: A SWIMMER BEGINNING TO PULL OUT A NET FROM THE LAND, AGAINST WHICH BEATERS DRIVE THE FISH.



3. STRANGE FISHES SPEARED IN POLYNESIAN WATERS: AN AUAN FISHERMAN DISPLAYING HIS CATCH SUSPENDED FROM HIS PRIMITIVE LANCE.



4. AN AUAN WOMAN ANGLING FROM A CORAL REEF WITH A ROD OF SAGO PALM: A BRANCH OF THE NATIVE FISHERIES PRACTISED ONLY BY WOMEN.



5. THE FEMININE SIDE OF THE AUAN NATIVE FISHERIES: SHOCK-HEADED AND GARLANDED WOMEN PREPARING TO NET THE FISH IN THE FAMILY "CORAL HOLE" TRAP THE FIRST STAGE OF THE PROCEEDINGS.



6. NATIVE WOMEN THROWING OUT, ONE BY ONE, THE STONES WITH WHICH THE CORAL HOLE IS FILLED: THE SECOND STEP IN FEMALE FISHERCRAFT AT AUA.



7. AUAN WOMEN, ALMOST SUBMERGED BY THE RISEN TIDE, CLEARING THE LAST STONES FROM A CORAL HOLE: A METHOD OF DRIVING FISH HIDDEN UNDER THE STONES INTO A COCONUT BAG AT THE BOTTOM.



8. PICTURESQUE AUAN FISHERWOMEN, WITH FLOWER-DECKED MOPS OF HAIR, LIFTING THEIR CATCH TO THE SURFACE IN THE LARGE COCONUT BAG: THE LAST STAGE BEFORE THE FISH ARE TAKEN ASHORE AND COUNTED.

Aua is a small coral island in the New Britain—New Ireland group, formerly part of German New Guinea. The natives live in what is practically a Stone Age state, almost untouched by contact with white men; and from a study of their pristine condition Mr. George Lane Fox Pitt-Rivers, the well-known anthropologist, who sends us these interesting photographs, has drawn valuable conclusions on Stone Age culture. Of photograph No. 2 he says: "Arrived at the fishing grounds, one man jumps overboard and spreads the net out in a fan-shaped line between the canoe and the shore. A line of beaters then drives the fish against the net, and when they are congregated there they fall an easy prey to the divers with their spears." Of the female pursuit of trapping in coral holes he writes: "No

man ever takes part in it, except in the preliminary work of constructing the hole in the coral reef. When finished, the holes are filled up with flat stones. The first proceeding consists, in placing nets round the hole. One by one the flat stones are thrown outside the net. As the tide rises the fishers are out or their depth and have to dive for the stones. Meanwhile, a long coconut bag is placed at one end of the hole; the stones are removed in such a way that the fish, seeking always to keep beneath a stone, are eventually congested on one side against the mouth of the bag. Finally (No. 8) the bag is closed; women lift it out of the water; it is carried to the beach, and the catch is counted. As many as 300 fish have been caught in one hole."

THE DISCOVERY OF A PALACE RICH IN SCULPTURE IN CYPRUS.

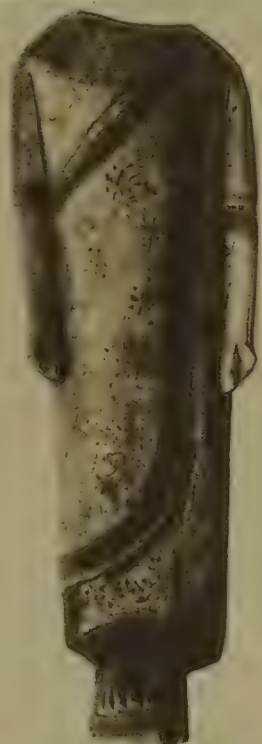
PHOTOGRAPHS BY COURTESY OF DR. EINAR GJERSTAD, HEAD OF THE SWEDISH ARCHAEOLOGICAL EXPEDITION IN CYPRUS.



SIMILAR TO FIGURES ON THE ACROPOLIS AT ATHENS: A LIMESTONE STATUE OF KORÉ TYPE FROM THE PALACE AT VOUNI.



ALMOST "MEDIEVAL" IN CHARACTER: A MALE FIGURE IN LIMESTONE FROM THE PALACE AT VOUNI, WITH A PAINTED ROBE.



A "MADONNA AND CHILD" OF CLASSICAL GREECE: A REMARKABLE STATUETTE IN TERRACOTTA FROM THE PALACE AT VOUNI.

IN A "HAT" LIKE A MODERN CLOCHE: AN ARCHAIC TERRACOTTA STATUE FROM THE PALACE AT VOUNI.



A GREEK GODDESS WITH A "MONNA LISA" SMILE: A LIMESTONE HEAD OF ATHENA FROM THE TEMPLE AT VOUNI.



REMINISCENT OF FIGURES IN ROSSETTI'S PICTURES: A TERRACOTTA STATUETTE OF THE CLASSICAL PERIOD FROM THE PALACE AT VOUNI.



FROM A PREHISTORIC SITE AT DALI, IN CENTRAL CYPRUS: A CULT BULL IN TERRACOTTA, OF THE LATE BRONZE AGE, WITH A CURIOUS "PLAID" PATTERN ON THE BODY.

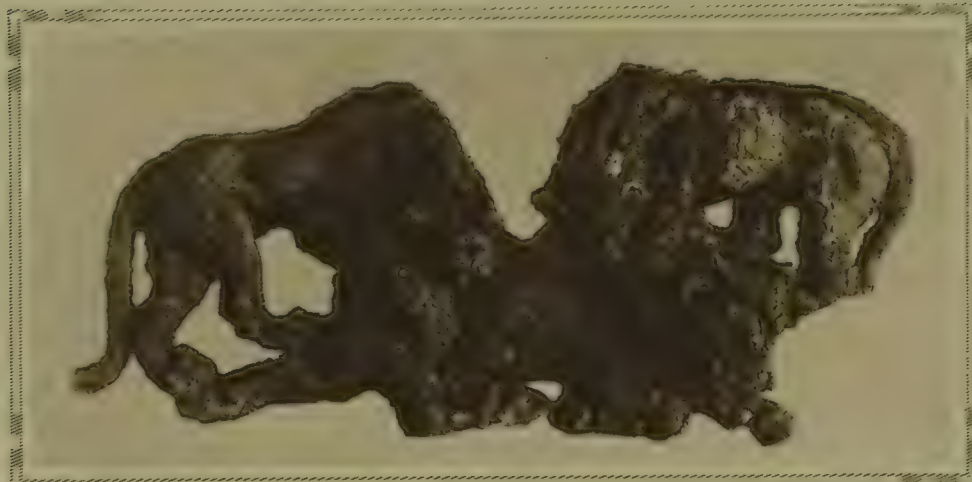


DATING FROM ABOUT 1200-1000 B.C.: ANOTHER TERRACOTTA CULT BULL FROM THE PREHISTORIC SETTLEMENT AT DALI, SIX CENTURIES OLDER THAN THE VOUNI SITE.

The great discovery of a palace, rich in sculpture, at Vouni, in Cyprus, is described by Dr. Einar Gjerstad in his article on page 500. "Soon," he writes, "we reached a stratum quite filled with specimens of sculpture—statues, heads, and statuettes of stone and terracotta, which were found fallen down the steps of a staircase leading to a monumental gateway. . . . Most of the sculptures showed Greek influence, and some are of the same type as the famous *Koré* statues found on the Acropolis at Athens and elsewhere in Greece. The sculptors who worked out these Greek thoughts in stone and terracotta lived at the end of the archaic and the beginning of the classical period, that is, about 550-450 B.C." The figures of bulls (shown in the two bottom photographs) from Dali belong to a much earlier

period. "Dali," writes Dr. Gjerstad, "is the ancient Idalion, situated in the middle of Cyprus. The result of our diggings there is of considerable importance to the history of religion. We found a settlement from the latest stage of the Copper Age (late Cypriote III., 1200-1000 B.C.). The central part is occupied by a cult place—the first, prehistoric cult place found in Cyprus. There we found a deposit of five cult bulls, of terracotta. . . . This cult place is typically Cypriote, in contrast to the Greek temple site on Vouni."

NEW CYPRUS TREASURES UNPARALLELED IN GREEK ARCHÆOLOGY.



ONE OF THE MOST REMARKABLE BRONZES FOUND IN CYPRUS: A RELIEF SHOWING TWO LIONS ATTACKING A BULL, FOUND ON THE TEMPLE SITE AT VOUNI.

ANCIENT GREEK
FASHIONS
RECORDED
IN STATUARY
FROM THE
PALACE AT
VOUNI:
A LIMESTONE
STATUETTE OF
A GIRL IN
"TURBAN HAT"
AND
HIGH COLLAR.



SMILING AS
EXPANSIVELY
AS A
MUSICAL
COMEDY QUEEN:
AN ARCHAIC
LIMESTONE
HEAD FROM
THE PALACE
AT VOUNI,
IN AN
ORNATE
"CROWN."



A
"TECKENHEIT"
OF ANCIENT
GREECE:
AN
ARCHAIC
TERRACOTTA
HEAD
FROM A
LIFE-SIZE
STATUE FOUND
IN THE
PALACE AT
VOUNI,
IN CYPRUS.



AMONG THE RICH TREASURE OF EARLY GREEK SCULPTURE FOUND ON THE PALACE SITE AT VOUNI: A LIMESTONE STATUE OF A GIRL (KORÉ).

The photographs of Dr. Einar Gjerstad's remarkable "finds" in Cyprus, with his article (given on page 500), have reached us through Mr. A. M. Woodward, F.S.A., Director of the British School of Archaeology at Athens. "I need not enlarge," writes Mr. Woodward, "on the importance of this discovery of a palace adorned with numerous statues, dating from the period 550-450 B.C., for nothing of the kind has been found in Greek lands before." Dr. Gjerstad, in his own article, says: "Vouni is not only a palace. On the very top of the rock we discovered some foundations traceable on the surface. We started excavations there, and soon we had discovered three of the most remarkable bronze figures ever found in Cyprus—two reliefs representing (respectively) two lions attacking a bull, and a statuette of a cow. The bronze statuette will give us an idea of Myron's famous bronze cow. The building where these bronzes were found is a *sacellum* divided into three naves by wooden walls. These, of course, have mouldered. . . . Partly below this *sacellum* appeared the foundations of a long rectangular building, evidently a temple." Some of the statues, it will be noted, afford interesting evidence of early Greek fashions, as well as of facial types, and in the titles to our illustrations we have ventured to draw a few fanciful comparisons.



AFFORDING AN IDEA OF MYRON'S FAMOUS ANIMAL STATUE: ANOTHER OF THE VERY REMARKABLE BRONZES DISCOVERED ON THE TEMPLE SITE AT VOUNI, IN CYPRUS—A FIGURE OF A COW.

CYPRUS RIVALS CRETE AS AN ARCHAEOLOGICAL TREASURE ISLAND.

UNPRECEDENTED GREEK DISCOVERIES—A PALACE, RICH IN SCULPTURE, OF 550—450 B.C.

By Dr. EINAR GJERSTAD, Head of the Swedish Expedition in Cyprus.

THE Swedish archaeological expedition in Cyprus, whose work last year at Lapithos and Soli was recorded previously, has this year been working at Vouni and Dali. The excavations of Soli have not been brought to an end, but will be resumed later on. Vouni is supposed to be the ancient Aipeia, and Aipeia was the Old Soli, whence, according to the legend, King Philokypros moved, on the advice of Solon, to found a new settlement in honour of Solon called Soli. Disregarding the etymological nonsense of the

a bull, and a statuette of a cow, measuring 25 cm. The bronze statuette will give us an idea of Myron's famous bronze cow. The building where these bronzes were found is a *sacellum*, divided into three naves by wooden walls. These, of course, have mouldered, but we can trace them in the post-holes and cuttings in the floor for the walls. Partly below this *sacellum* appeared the foundations of a long rectangular building, evidently a temple. The temple, too, had been built up of wood, and that is why it has been so entirely destroyed.

But it is not only a temple. In front of it is an open court where some bases of statues were found, and at the southern limit of the court the foundations of two smaller buildings were unearthed. In these buildings we found a series of votive offerings piled up: shields, swords, spear-heads, arrow-heads, and so on. The buildings are treasure-houses! A temple with treasure-houses, a typical Greek holy place!

A question of the utmost importance is that of the relation between the temple and the palace. In the palace many votive statues were found; on

of Cyprus. Excavations have already been undertaken there long ago. What remained for us to do was to attack the top of the acropolis of Idalion, where no proper excavations had yet been carried out. The result of our diggings there is of considerable importance to the history of religion. At the bottom of the culture strata we found a settlement from the latest stage of the Copper Age (Late Cypriote III., 1200-1000 B.C.). The central part of this settlement is occupied by a cult place, the first prehistoric cult place found in Cyprus. There we found a deposit of five cult bulls of terracotta, with other objects, which had all been placed on a wooden table of which carbonised remains were found. The cult continued into the Iron Age, and reached in the archaic and classical periods a high stage of development. After the classical period the holy site fell into disuse.

This cult place on the top of the acropolis of Idalion is typically Cypriote in contrast to the Greek temple site on Vouni. It is consequently not a question of a temple, but of a large open court with an altar and surrounded by a wall—in fact, a *temenos*. The cult was aniconic, and, moreover, no votive statues were found, which is rather unusual: the Cypriote holy sites used to be crowded with statues. The votive offerings found in the *temenos* which we excavated are of a quite different kind. Mainly they consist of weapons. Two of the shields are beautifully decorated with stamped ornaments of lotus flowers and palmettes, and a cuirass of iron is worth mentioning as unique. But other kinds of votive offerings were also discovered: bronze bowls, bronze lamps, iron lamps, rings of bronze, iron, and silver, some with engraved signets. A bull's head of bronze, which had been used as a decoration of a wooden cist, must be reckoned among our finds of great artistic merit.

No epigraphic material giving evidence of the name of the god worshipped has been found hitherto. Some sixty years ago, however, a peasant discovered a fragment of a bronze object with an inscription telling us that it was a votive offering to Athena. The votive offerings found by us, most of which—as mentioned above—consist of weapons, also agree very well with Athena's character of a war goddess. But it must be emphasised that the Athena worshipped in Idalion was its old Cypriote town goddess and not a Greek Athena in an Athenian helmet as at Vouni. It was a Cypriote Athena—i.e., a Cypriote



A CYPRIOTE PARALLEL TO THE PALACE OF MINOS: THE ROCK OF VOUNI, WHERE EXCAVATION HAS REVEALED "A PALACE OF THE ARCHAIC AND EARLY CLASSICAL PERIOD," WITH MAGAZINES CONSTRUCTED "AS IN THE MINOAN PALACES OF CRETE."

legend, there is no reason to reject the statement of an early connection between Aipeia and Soli.

Vouni is a steep and wild rock rising directly from the sea to about 800 feet at a distance of about four miles north-west of Soli. The excavations which started there in the middle of April have resulted in a complete success. Suddenly one day the great moment came. In the morning we had the first indication—fragments of a lifesize terracotta head; and soon we reached a stratum quite filled with specimens of sculpture: statues, heads, and statuettes of stone and terracotta which were found fallen down the steps of a staircase leading up to a monumental gateway. Bases of statues were found still *in situ* at both sides of the gate. The statuettes had probably been placed in niches higher up in the now ruined walls. Most of the sculptures show Greek influence, and some are of the same type as the famous *koré* statues found on the Acropolis at Athens and elsewhere in Greece. The sculptors who worked out these Greek thoughts in stone and terracotta lived at the end of the archaic and the beginning of the classical period—that is, about 550-450 B.C.

An architecture quite worthy of these exquisite sculptures soon began to appear. Trenches were dug to discover the extent and character of the building. Massive walls formed of well-cut, quadrangular blocks extended over an area of more than 10,000 square metres (over 10,000 square yards), all belonging to the same building—a palace! A palace of the archaic and early classical period! In the centre of it we find a large open court, from which a wide staircase leads up to the western part. There we notice terraces on different levels. This part of the palace had at least two storeys. A series of at least fifteen magazines open from a narrow corridor—in the same way as in the Minoan palaces of Crete. The trenches cut here traversed large magnificent rooms with verandahs and terraces descending in different levels to the main gate where the statues were found. Still, we have only a general idea of the palace—and scarcely even that. Its complete excavation still remains to be carried out. When that has been done the history of culture will be enriched by a monument of great importance, since no other architecture of this kind from the period concerned has been discovered within the Greek culture area.

But Vouni is not only a palace. On the very top of the rock we discovered some foundations traceable on the surface. We started excavations there, and soon we had discovered three of the most remarkable bronze figures ever found in Cyprus—two reliefs representing respectively two lions attacking

the temple site none, only some bases. The *sacellum* and the palace are contemporary. The temple is consequently earlier than the palace. Imagination combines the archaeological evidence in the following way: If the conquest of Soli by the King of Aipeia took place in the later part of the sixth century B.C., there are some contemporary events occurring in Aipeia and Soli that seem to be mutually connected. At that time a temple in Aipeia was destroyed and a temple in Soli (which we excavated last year) was erected. At the same time a palace in Aipeia and a *sacellum* above the ruins of its destroyed temple were built. When the King of Aipeia conquered Soli the first thing for him to do was to build a temple to the god by whose assistance the conquest succeeded. In the place of the old destroyed temple of Aipeia he confined himself to building a *sacellum*, and the votive statues were removed to the palace which he had now built for himself as a summer residence on the cool rock of Aipeia. He could afford it. He had become a mighty King controlling the copper-mines of Soli. His successor preferred to stay there all the year round, and therefore the summer palace of Aipeia was abandoned.

This is a conjecture which further excavations will perhaps corroborate. What we know is that the deity by whose assistance the King of Aipeia conquered Soli was Athena: it is a temple of Athena which we have excavated on the top of Vouni. The archaeological evidence is the discovery of four heads of Athena within the temple area—Athena in an Athenian helmet, strictly classic.

Dali is the ancient Idalion, situated in the middle



"THE FIRST PREHISTORIC CULT PLACE FOUND IN CYPRUS": RELICS OF A LOCAL WORSHIP OF ATHENA AS "A CYPRIOTE TOWN GODDESS" ON A MUCH OLDER SITE THAN VOUNI: PART OF A LATE BRONZE AGE DEPOSIT AT DALI, DATING FROM 1200-1000 B.C.

This deposit included five cult bulls of terra-cotta, two of which are illustrated on page 498.

goddess called Athena by the Greeks and by them identified with the acropolis goddess of Athens. Unlike the temple of Athena at Vouni, the *temenos* of Athena in Idalion therefore affords proof of that mixture of Oriental and Greek elements which in Cyprus were eventually assimilated into a homogeneous culture.

PRESENT-DAY CURIOSITIES: VIGNETTES FROM THE WORLD'S PEEP-SHOW.



A SHIP ELECTRICALLY CONTROLLED BY ONE MAN: THE "BRUNSWICK," BUILT ON THE CLYDE, THE LARGEST OF ITS KIND.

The "Brunswick" is an oil tanker constructed at Greenock on the Clyde, for America. No engineers are needed to start or stop her Diesel engines, and the whole ship can be manipulated from one switchboard on the captain's bridge. Perhaps seamanship of the future is going to become no more complicated than the driving of a car?



A CAR WITHOUT AN ENGINE: A COMING ADDITION TO LONDON'S STREET TRAFFIC.

It is confidently expected that the car in the above photograph will meet with a great demand, for, being without an engine, its owner incurs no tax. It has three gears, hand and foot brakes, hood and side screens, and is worked by pedals.



LIKE A FUTURISTIC SUBSTITUTE FOR A TOWN CLOCK: A GIANT THERMOMETER AND BAROMETER AT MUNICH. Munich, always famous for its leadership in German art and culture, has now made a step of importance in the advance of science and municipal organisation by installing a public thermometer and barometer on the tower of one of its museums.



SHOPPING BY SLOT-MACHINE: HOW FRUIT MAY BE BOUGHT IN COPENHAGEN AFTER CLOSING HOURS.

The slot-machine has evidently come to stay in Europe. While in England we have gone on from chocolates and "toasted peanuts" to cigarettes, matches, chewing-gum, and films; in Germany and Austria you can obtain a whole meal, including drinks, in a slot-machine restaurant. The movement has just arrived in Denmark, where it is popular because it allows the Danish fruit merchants, as it has the English tobacconist, to maintain the sale of their wares outside their doors when their shops are officially closed.



THE WIDE USE OF MECHANICAL "SALESMEN": A PURCHASER GETTING A FILM FROM A SLOT-MACHINE IN COPENHAGEN.



A GERMAN "SHOW-BOT" TO SAIL ROUND THE WORLD: THE SCHOONER "VATERLAND." The schooner "Vaterland" is to make a pleasure cruise round the world, fitted with a theatre on board, a German "biergarten," a dancing room with loud speakers in different parts of the ship, and a complement of thirty-two actors and "artistes."



TO ADMIT MOTOR-CARS, BUT PREVENT DEER FROM STRAYING OUT: THE CURIOUS NEW ENTRANCE TO COWDRAY PARK AT MIDHURST.

This strange gateway has been devised at Midhurst to keep the deer from straying from Cowdray Park during the night. The deer will not cross it, being afraid that their feet will slip through the open spaces. Formerly motorists had always to stop and open and shut the gate on entering, so that this curious "skeleton" bridge will prove a great benefit to the motoring public.



REMINISCENT OF THE COBRA ON TUTANKHAMEN'S FOREHEAD: A BUNCH OF "PLANT COBRAS."

This curious plant resembles its dreaded serpent namesake both in appearance and habits; for it has a ferocious nature, and lives on insects, being, indeed, one of the few carnivorous plants known. The cobra plant is without leaves. It comes from Ohio.

THE WORLD OF SCIENCE.

CRABS AND LOBSTERS.

By W. P. PYCRAFT, F.Z.S., Author of "Camouflage in Nature," "The Infancy of Animals," "The Courtship of Animals," etc., etc.

THE impossibility of adequately describing any object in terms of itself is all too seldom realised, and this is especially true of "Nature Study," and that deadly and soul-destroying subject, School Botany. For we cannot properly appreciate

its lower edge are set a number of long, jointed walking legs. Under the rings of the body behind the head-shield will be found a number of "flabellæ," or swimming legs. During life the rings behind the head-shield project directly backwards.

among the crustacea. But it has its counterpart in some of the mantises, which are insects.

There is another feature about the several types which have been discussed here which is worth noting. The prawn and the shrimp have a thin, translucent shell, enclosing little bags of pigment of various colours, and these are controlled by special muscles and nerves, so that their contents can be spread out according to the intensity of the light-stimulus which activates the nerves. By this means the coloration can be changed so as to harmonise with the background on which the animal is resting at the moment. The crabs and lobsters have a fixed coloration, because their shells are of stony hardness and very thick. Some of the crabs, like the spider crab, take great pains to match their surroundings by affixing to their shells pieces of sea-weed, which are held in position by means of the hook-like bristles which cover the surface for this purpose.

Finally, a word as to the edible qualities of the crab and lobster. In the former the only solid white

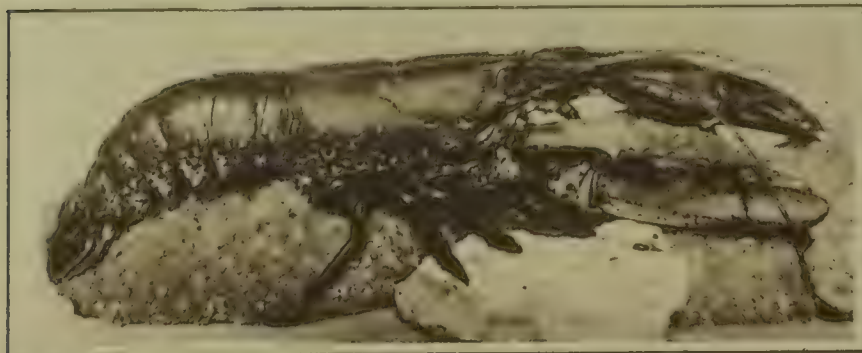


FIG. 1. THE LOBSTER: IN GENERAL ASPECT LIKE A GIANT PRAWN, EXCEPT FOR THE BIG CLAWS; AND DIFFERING GREATLY FROM THE CRAB.

The lobster, in its general form, looks like some giant prawn, but it differs therefrom in one important particular—the great size of the pincers, or "big claws." The head-shield extends backwards over the walking legs, and behind this comes a series of semi-rings, terminating in a tail-fin. In the crabs the whole of this ringed area of the body is reduced to a mere vestige tucked away under the great transversely expanded head-shield.

even the essential characters either of plants or animals unless, and until, we compare them with others of their type, but of different species. The joys of "rock-pool" hunting are robbed of half their thrills by the failure to realise this all-important fact. But here a difficulty arises. Youngsters cannot be expected to make such comparisons of themselves, for as yet they have no experience in the art of thinking, and their elders are commonly in no better case. I not seldom meet those who are engaged in teaching "Nature Study," and what they are pleased to call "Botany"; but it is seldom indeed that I find they stray outside the confines of "corms and rhizomes," the garden-snail or the frog.

By way of illustrating what I am driving at, let me return to the theme of rock-pools. Of all the

and the lobster. The hermit crab must be removed from its shell before its very remarkable characteristics can be seen. What answers to the head-shield, it will be noticed, is very soft; while of the walking legs it will be seen the two hindmost pairs are greatly reduced in length. Of the two pairs of pincers, one is more than twice the size of the other; while there is a long body behind the head. But this is not cut up into rings, and terminates in a hook which serves to anchor the body to the shell of the winkle or whelk, as the case may be, which it has chosen for its fortress. How, and why, has such a strange transformation of structure and habit come about?

Let me turn now to the little "scaly," or "squat-lobster" (Fig. 4), by no means common in rock pools, but still to be found there. Its coloration is remarkable, being bright red relieved by short, bright-blue bars; while the whole of the upper surface of the body looks as though it had been chiselled out into a series of long, fine, transverse grooves. The general shape of its body is, as its name implies, like that of the lobster. Too little of its habits during life is known to enable us to interpret this peculiar armature, but it probably serves as a form of protective coloration to conceal it from its enemies, for crabs of all kinds are eagerly sought by fishes of all sorts, as well as by the octopus.

And now I come to another extremely interesting type. This is squilla. You may find it in Jersey, or, nearer home, off Plymouth, but only among the zostera-weed, and at very low tides. It is not often found; but this must not be taken to show that it is excessively rare. It is sometimes washed ashore in thousands, as after a storm

in Jersey some years ago, for instance, when at a very low tide great areas of zostera were torn up and washed ashore with the bodies of these strange creatures which had found a home amid its roots. It will be seen, in the adjoining photograph (Fig. 2), that it differs from the other types described here, in that the head-shield does not extend backwards to cover the walking legs, and that it is curiously flattened. The creature presents yet another striking peculiarity; and this in the character of its pincers. In those of the typical crabs these are formed by a movable "digit" working against a fixed one. Here we have a movable digit armed with long, comb-like teeth opposed to the base of the limb joint next above it. From that embrace nothing escapes. It is not easy to grasp how this curious type of pincer has come into being, and there is no other like it

FIG. 3. THE EDIBLE CRAB: THE SHELL, PRESENTING A REMARKABLE CONTRAST TO THE HEAD-SHIELD OF THE LOBSTER.

The familiar shell of the edible crab is shown here to illustrate the differences between the head-shields of the crabs and the lobsters. In the crabs, the hinder part of the body, or abdomen, has been reduced to a small triangular plate folded up under the head-shield.

meat is that found in the great pincers, or dug out of deep cells within the head-shield. That delicious, yellow, creamy substance we find in the head-shield answers to a sort of combined liver and pancreas. There is comparatively little of this in the lobster, but we are quite content with the most toothsome white meat furnished by the long body behind the head-shield and the "big claws." The whiteness of the "meat," by the way, is due to the fact that the blood in these creatures is colourless. Here I



FIG. 2. SQUILLA: A CRUSTACEAN (FOUND ONLY IN THE ZOSTERA WEED) WITH PECULIARLY SHAPED "BIG CLAWS" AND A HEAD-SHIELD THAT DOES NOT COVER THE WALKING LEGS.

In squilla the head-shield does not extend backwards to cover the walking legs, and the "big claws" are of a very singular character, a movable digit, armed with comb-like teeth, folding forwards into a broad, flattened segment grooved to receive the teeth. A similar weapon has been developed in the mantises among the insects.

inhabitants to be found there, the commonest, probably, are members of the crab tribe—the shore crab, edible crab, hermit crab, prawns, and shrimps. That these all differ one from another is obvious enough. And during the sojourn by the sea yet other species will be found, either in the pools formed only at exceptionally low tides or in the spoils brought in by the shore fishermen. A portable microscope will bring to light yet other types of this great family.

Now let us see how vastly more interesting these merely different types become when they are compared, even superficially, one with another. Set, for example, side by side the shore crab, or the edible crab, and the prawn—or, better still, the lobster (Fig. 1)—because it is so much bigger, and note their differences. In the prawn or the lobster there is a long, narrow head-shield, and behind this a series of segments, or rings, ending in a well-developed tail-fin. From the fore-end of the head-shield project a pair of long antennæ, and along



FIG. 4. THE SQUAT-LOBSTER: A SPECIES WITH A CURIOUS BODY CUT INTO TRANSVERSE GROOVES, AND SPINY CLAWS.

In the singular squat-lobster the body is brightly coloured—a light red relieved by pale-blue lines and bars—while the whole surface is curiously corrugated by narrow transverse grooves. The big claws are armed with spines throughout their length.

must stop, not for lack of material, but of space. Enough, however, I hope, has been said to show how much more interesting these creatures become when compared one with another, instead of regarding each as complete in itself.

PICTURES ON THE WIRELESS! A NEW WONDER FOR B.B.C. AUDIENCES.

DRAWN BY OUR SPECIAL ARTIST, G. H. DAVIS, FROM DETAILS SUPPLIED. (COPYRIGHTED.)



HOW THE B.B.C. WILL BROADCAST PHOTOGRAPHS, DRAWINGS, AND SO ON: THE APPARATUS EXPLAINED IN DIAGRAM.

It was recently announced that "the British Broadcasting Corporation has made technical experiments with still picture transmissions, as a result of which it has been decided to make arrangements for a short transmission daily (excluding Sundays) from Daventry SXX, outside regular programme hours. These transmissions will be given over a period beginning in October next." The Fultograph system depends for success upon a copper foil on which is imposed the negative picture broken by a series of narrow lines covered by an insulating medium and varying in thickness relatively to the light and shade values of the picture. At the transmitting end, the copper foil and the stylus form part of an electrical circuit which is broken and closed when the stylus passes over the respective tone values. Thus when the stylus passes over dark tones on the negative picture the

electrical circuit between foil and stylus remains open. When the stylus passes over a light section on the negative picture, the circuit is closed, thereby creating an electrical impulse which is broadcast. The successive impulses conforming to the respective tone values are picked up by the home receiving set and cause the receiving stylus to make electrical contact on the sensitised paper, which becomes stained on those parts touched by the stylus. An important part of the apparatus is a small electrically operated clutch and cam. At every revolution of the cylinder during transmission, an electrical signal is broadcast which, working through a rectifying device and relay at the receiving end, operates similar gear, and stops and starts the cylinder once per revolution, thus ensuring that all receivers are in "step" with the transmitter.

GERMANY AT THE END OF HER TETHER: A BOOK OF REVELATIONS OF 1918.

BEING AN APPRECIATION OF

"THE MEMOIRS OF PRINCE MAX OF BADEN."*

PUBLISHED BY CONSTABLE.)

PRINCE MAX set his reputation, almost his life, upon a cast, and stood "the hazard of the die" as the European War was dragging drearily to its close. He did so unwillingly; for, although convinced that his acceptance of the German Chancellorship would gratify many in view of his record as one whom his opponents rejoiced to dub "the Pacifist Prince," he was painfully aware of the embarrassing intricacy of his task. On Oct. 15, 1918, he wrote from Berlin to the Grand Duke of Baden: "... Only on my arrival here did I realise how completely the Old Prussian System has broken down. I could have recoiled in horror when I saw that there was no military force to back my policy, that we had already gone bankrupt on the battlefield. I did not do so because all the responsible people pointed to me as the only man who could still with decency carry out the Great Liquidation. I believed that I had been summoned at five minutes to twelve, and find out that it is already five minutes past. We are already in the middle of a revolution. If I succeed in carrying it through peacefully, our continued existence as a state after the conclusion of peace is assured. If I do not succeed, the revolution of force and ruin is at hand. I still hope to save the Kaiser and the Hohenzollern dynasty; this alone demands an expenditure of mind and spirit which absorbs the whole energies of a single man. ..."

The letter is characteristic: Prince Max was never an optimist. "The campaign of 1916," he notes, "ended in bitter disillusionment all round. We and our enemies had shed our best blood in streams and neither we nor they had come one step nearer to victory. The word 'deadlock' was on every lip. In Germany, too, the impossibility of a purely military decision was realised by many in whose presence the words 'peace of understanding' could not hitherto have been uttered. People looked to the leading statesmen with a certain insistent expectancy: 'The forces on either side have obviously reached a condition of rigid equilibrium; the war must become senseless; what are you going to do to end it?'"

"Peace of understanding": that was the Prince's "slogan" throughout; and, as a very natural result, his Memoirs are of the "I told you so!" order.

The Fatherland, he was content to think, was in the right and shielding itself, not advancing to conquer, deport, and enslave. Early in 1917, indeed, he succeeded, "by conscientious research," in reaching the conclusion that "when the German people turned like a stag at bay in August 1914, its instinct did not play it false. The millions of Germans who have given their life or their dearest in the comforting belief that they were defending their country against a mortal danger were not building on sand," he determined, "but on an historical truth." In fact, he did not relish the propaganda of the Allies!

Now he argues: "The protagonists had, in the year 1915, in 1916, in 1917, and in 1918, golden opportunities of bringing about a peace of general contentment. This peace would have earned the protests of the jingoes in all the countries concerned, and the gratitude of their peoples for centuries to come. It often seemed as if the leading men on both sides were on the point of taking the decisive step, and yet it never was taken."

The cause is not leagues to seek. The Allies were convinced of the rectitude of their actions; the Central Powers did not deem it in the least likely that they would lose, or, at all events, did not dream that they could crumble as completely as they did. And, in the later months, Germany, to say nothing of the enemies she evoked, had to reckon with the Conference table of the future.

The while, it must be remembered, there were few Germans and Germanophiles who did not nourish thoughts of the disintegration of the effort of the British Empire, the foe-in-chief. Berlin hugged the notion that Britain would not, and could not, go on pouring out lives and limbs and treasure just as tightly as those who credited the Bellocian theory visualised a Germany that had no more

fighting men as early—was it not?—as 1915 or '16. And Prince Max, with many another, "banked" on crushing our will to war, on breaking the "Home Front," on shattering our certainty that we were inviolable—if only Lansdowne could be encouraged and Lloyd George, champion of the "knock-out blow," be persuaded to see grace and modify his inconvenient aggressiveness and cocksureness! More, they imagined a land distraught by strikes; shocked by casualties; terrified and paralysed by submarines.

That by the way. It is one of the points of interest—this Germany of the deceitful hopes, the groping and guessing in the dusk and the dark, the false psychology, the soldiers and politicians at loggerheads; this Germany upon whom it dawned slowly, so slowly, that there was a canker in her body, a canker that called for the steel of the surgeon-statesman and not the German sword—"The cleaner the German sword, the sharper it is"; yet it is neither lancet, nor scalpel, nor knife!

But it is only one of the points. Nothing could be more revealing than Prince Max's analytical and apologetic Memoirs. Two phases may be mentioned as being of

work... the Russian contagion was at work in the masses. The January riots were Trotsky's work. ... On 5th February the strike collapsed, thanks to the energetic measures of the military authorities." Meanwhile, the "All-Highest" dillied and dallied, blowing hot and cold; now the mighty Emperor, now the saviour of the citizen. In an Address on October the 21st, 1918, he said of his subjects: "I have expressed My determination that the new times shall give birth to the new order which they demand," and a week afterwards he confessed: "The Kaiser is now the Servant of the People"; but that is not to say that he saw eye to eye with Herr von Treutler, the Prussian Minister in Munich, who urged in a "Secret" note to the Imperial Chancellor: "Should His Majesty thus be willing to lay down the Imperial crown, he would only be carrying further, and putting the crowning touch to, his labours of twenty-six years in the cause of peace. His figure would live on in history as the noblest, the most high-minded, the most self-sacrificing of the German people's benefactors."

Nevertheless, on the 9th of November he had to concede: "To avoid bloodshed His Majesty is ready to abdicate as German Kaiser, but not as King of Prussia. His Majesty also desires to remain King of Prussia in order to prevent the army becoming leaderless and breaking up, in consequence of the resignation of the majority of officers which would be simultaneous with such abdication."

The rest, also, is History—and Spa and Doorn.

And so to Ludendorff; with the remark that the reader innocent of German-Empire methods will be amazed at the dictatorship of the Supreme Command in the field even after it was imperative to recognise and tell, with "heroic honesty," the Truth and nothing but the Truth—nearly!

The great German military leader—something of a bogey to the Allies, particularly in association with Hindenburg (who, in the March of the final year of the hostilities, was awarded "the Iron Cross with Golden Rays, a distinction which had only been given once before—to Bluecher for his victory at Waterloo")—is presented in an aspect that will provide a surprise for most: pig-headed and vacillating according to his mood and his contempt for his civilian cross-examiners; a supporter of a degree of "frightfulness" as a proper measure of warfare; an autocrat so stubborn that it was expedient to compel his dismissal. Yet he did his best according to his militant faith. His Soldier's Luck—a necessity, as he himself had it, for every Commander—could not counter a tired Army and a Navy disgruntled and discredited; could not combat internal dissensions, the effect of the much-bewailed blockade, the Tanks, Labour troubles, the comparative innocuousness of the U-boat, ever-waning man-power, disagreements in policy, the waxing conviction that Imperialism was at the root of the German aims, the subtleties of Wilsonian Notes, the pertinacity of forces strengthened morally and materially by the United States, and cheerfully, doggedly, splendidly sure of their ability to win.

And there dawned that doleful day for the Central Powers—October 3rd, 1918—when it had to be announced by Hindenburg: "The Supreme Command insists on its demand of Sunday, 29th September, that a peace offer to our enemies be issued at once. ... The German army still stands firm and successfully wards off all attacks. But the situation becomes daily more critical and may force the Supreme Command to take momentous decisions. It is desirable in the circumstances to break off the battle in order to spare the German people and its allies useless sacrifices. Every day wasted costs thousands of brave soldiers their lives."

My space is filled. Nothing now remains but to repeat the fact that the Memoirs of Prince Max of Baden, the self-questioner, are nothing if not a divulgence. They add materially to our comprehension of Germany at war, Germany not out of the war at the "right time," and Germany in Revolution, at the advent of Ebert; and, doing so, are entitled to rank with those volumes to which general readers will be powerfully attracted and historians deeply indebted.

E. H. G.



SELECTED DESIGNS FOR A NEW FRENCH 100-FRANC GOLD COIN: A PRELIMINARY SELECTION FROM WHICH M. POINCARÉ WILL MAKE A FINAL CHOICE.

The above designs (reading from left to right and beginning at the top) are those of MM. Guilbert, Vernon, Morlon, Dropsy, Yencessa, Bazor, Delamarre, Turin, La Fleur, and Lavillier.



THE NEW FRENCH COINAGE COMPETITION: THE OBVERSES OF NINE SELECTED DESIGNS FOR A NEW SILVER 10-FRANC PIECE, FROM AMONG WHICH THE FINAL CHOICE WILL BE MADE.

For the new French coinage under the scheme for the stabilisation of the franc, 64 designs were submitted to the Administration des Monnaies. Prizes of 50,000 francs (£400) will go to the author of the accepted design for each of three denominations—a 100-franc gold piece and silver pieces of 20 and 10 francs. The obverse is to be a female profile symbolical of the Republic. It was arranged that, from a preliminary selection of designs (including those here shown), the three winning designs should be finally chosen by M. Poincaré. The treatment of the head has been described by critics as ranging in style from a minnette to Minerva. Reading from left to right, beginning at the top, the above designs are those of MM. Rasumnu, Morlon, Delannoy, and Benard, Mlle. Guzman, and MM. Bazor, Popineau, Turin, and La Fleur.

outstanding interest. The most luminous stars in the galaxy are those gleaming about the Emperor William II. and about Ludendorff.

"K. und K." first, as the lesser light.

His last Chancellor served him well and did his utmost to uphold him and his line, but it was not to be. Even Prince Max—a German Prince!—knew at long last that Imperial and Kingly majesty must go. A "cry of distress" which reached him from the capital at the end of January 1918 lamented: "The springs of our moral strength in this war are failing. All can still be saved. ... I think that ... the historic hour has come when the Kaiser must save his people. Franchise reform in defiance of opposition ... unequivocal declaration on Belgium. ... The only possibility I see is that the Kaiser should intervene. I know that the Kaiser, if he wants, can carry everything through against the opposition of the Supreme Command, but the Kaiser must place himself on the people's side, otherwise the authority of the monarchy is at an end." The Prince adds: "On 28th January, 1918, and the next few days about 180,000 men in Berlin struck

* "The Memoirs of Prince Max of Baden." Authorised Translation by W. M. Calder and C. W. H. Sutton. In Two Volumes. (Messrs. Constable and Co.; 42s.net.)

PERSONALITIES OF THE WEEK: PEOPLE IN THE PUBLIC EYE.



KING ZOGU OF THE ALBANIANS AND HIS SISTERS.
Our readers will remember that we have already illustrated the ceremonies which took place at Tirana when Ahmed Beg Zogu, President of the Albanian Republic, was proclaimed King of the Albanians. We now give this interesting new photograph which has since been taken. It is reported that the Coronation of King Zogu will take place at Kruja, the ancient capital of Albania.



THE PRINCE OF WALES AND THE DUKE OF GLOUCESTER IN EGYPT.

During their recent stay in Egypt on the way to East Africa, the Prince of Wales and the Duke of Gloucester, after bathing at Aboukir in the morning of September 12, were entertained at an informal luncheon by King Fuad at the Ras-el-tin Palace at Alexandria. They are seen above going to play golf after luncheon.



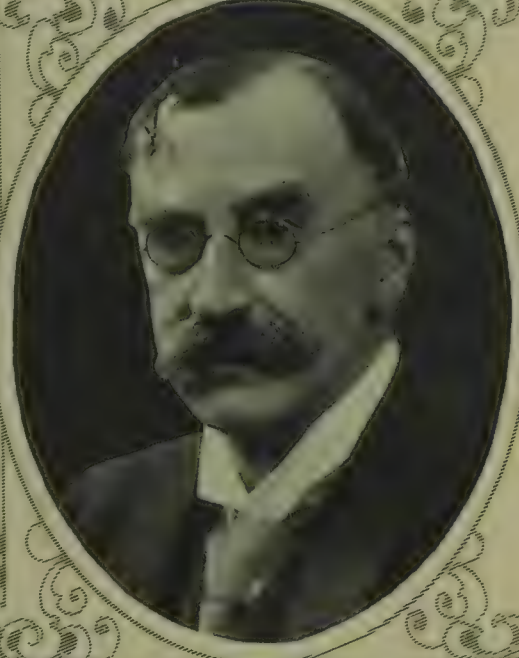
THE EARL OF DURHAM.

Lord Durham, who died at his home at Exning, near Newmarket, on September 18, at the age of seventy-four, had been Lord Lieutenant of Durham since 1884, and was Chancellor of Durham University. He was well-known in the sporting world, and last year won the Oaks.



THE SULTAN OF MUSCAT AND OMAN.

The Sultan of Muscat, who lately came on a visit to England, rules a part of Arabia reputed to be the hottest country in the world. On September 18, dressed in Eastern ceremonial costume, he placed a memorial wreath on the Cenotaph in Whitehall. He is shown above saluting the Cenotaph after the ceremony.



SIR THEODORE COOK.

Sir Theodore Cook, the distinguished journalist and writer on art and sport, died suddenly on September 16. It is chiefly as Editor of "The Field" for the last eighteen years that he is known to the public. In his younger days he was a famous oarsman and fencer.



MR. T. P. PERKINS.

The final of the American Amateur Golf Championship, concluded on September 15, was memorable from the fact that the holder, Mr. R. T. Jones, met the British amateur champion, Mr. T. P. Perkins. Mr. Jones won by 10 up and 9 to play.



LIEUTENANT DEMOUGEOT, THE RESCUED MAIL-PLANE PILOT.

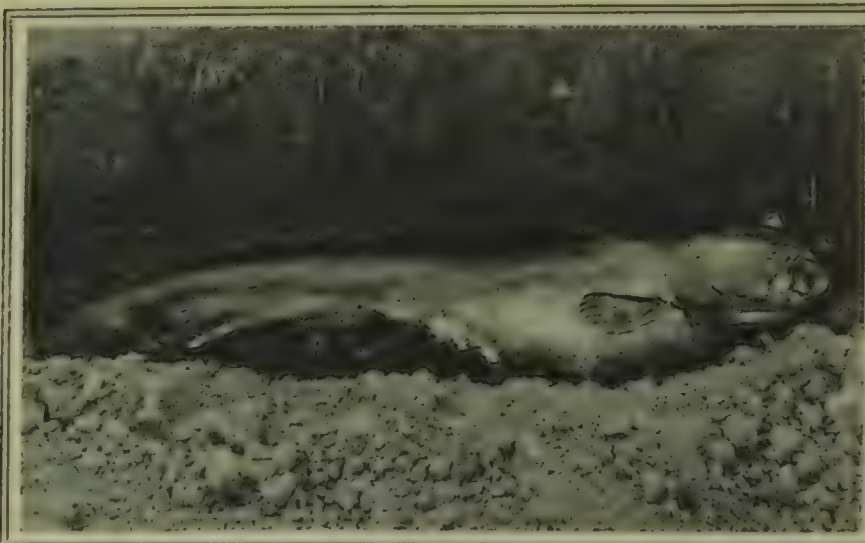
Lieutenant Demougout piloted the mail-plane (catapulted from the French liner "Ile de France") which recently made a forced descent off Scilly. The occupants and mails were saved by the Brixham trawler, "The Children's Friend." Lieutenant Demougout (second from left) and his wireless operator (extreme left) are here seen on board the trawler with the crew.



SIR EDWARD WARD.

Sir Edward Ward, who died on Sept. 11, has been called "one of the greatest supply officers in the history of the British Army." As Permanent Under-Secretary for War he carried out important reforms. During the war he organised the Metropolitan Special Constabulary.

FROM THE WORLD'S SCRAP-BOOK: NEW ITEMS OF TOPICAL INTEREST.



A CATFISH MYSTERY: THE FIRST SEEN OF SPECIMENS PUT IN LORD ROTHSCHILD'S RESERVOIR OVER TWENTY YEARS AGO—AN ADULT FISH RECENTLY FOUND DEAD.
Over twenty years ago Lord Rothschild placed in a reservoir on his estate at Tring a number of young specimens of the cat-fish (a native of the Danube) to test whether they would thrive in English waters. They are believed to live on the river-bed. Nothing had since been seen of these fish until the other day, when the dead one shown above was found afloat. It was 4 ft. 8 in. long, and weighed 41 lb.



AN AUTOGIRO ON A 3000-MILES TOUR OF BRITISH AVIATION CENTRES: THE MACHINE IN FLIGHT NEAR NEWCASTLE.

The Cierva Autogiro machine "C8 Mark II." is here seen leaving the Newcastle Aerodrome during its recent 3000-miles tour round the aviation centres of Great Britain. This is the same machine which was entered for the King's Cup race this year.
Photograph by Courtesy of the Newcastle Aero Club and the "North Mail."



REPLICAS OF OLD SWEDISH COPPER COINS, THE LARGEST EVER MADE.

The biggest coins ever made were used in Sweden about 300 years ago. The photograph shows exact replicas made for schools, collections, and museums. The top coin had a value of ten "dalers."



HOLDER OF THE SPEED RECORD OF 50 M.P.H. FOR MODEL MOTOR-BOATS: THE "CHATTERBOX" DEMONSTRATED AT THE MODEL ENGINEERING EXHIBITION.
The "Chatterbox" is a small model motor-boat which holds the speed record—50 miles an hour—for craft of its type. Its owner is here seen demonstrating the mechanism to young visitors at the Model Engineering Exhibition in the Royal Horticultural Hall.



EQUIPPED FOR A GAS ATTACK ON CRIMINALS: A MEMBER OF A NEW PARIS POLICE UNIT, WITH GAS-MASK, BODY-ARMOUR, AND SHIELD.



THE NEW "GAS" UNIT OF THE PARIS POLICE "IN ACTION" AGAINST CRIMINALS: A DEMONSTRATION "ATTACK" ON A BARRICADED DOOR.

The Paris Police, we are informed in a note supplied with the above photographs, have recently instituted a new branch of the force, described as a "gas unit," and fully equipped for employing the methods of gas warfare against criminals of the more dangerous and violent type, such as



THE COMPLETE EQUIPMENT OF THE PARIS POLICE "GAS UNIT": AN ARMOURY INCLUDING GAS-MASKS, CYLINDERS, STEEL BREAST-PLATES AND SHIELDS, AND REVOLVERS.

bandits and so on. The new corps consists of technically trained men in civilian clothes wearing a gas-mask, a steel breast-plate and neck-protector, and carrying a steel shield, besides a revolver. One of the photographs shows how they force an entrance through a barricaded door.

"THE TOP O' THE WORLD": A SUPERB AIR PHOTOGRAPH.

PHOTOGRAPH BY CAPTAIN ALFRED G. BUCKHAM, F.R.P.S.



"SHOWING THE SOMEWHAT UNCOMMON TYPE OF MAMMIFORM CLOUD": AN AWE-INSPIRING EFFECT OF A BIPLANE ABOVE HIGH MOUNTAIN TOPS, EXHIBITED AT THE LONDON SALON OF PHOTOGRAPHY.

That the "fine art of photography" is advancing steadily, both as regards technique and composition, is demonstrated by the notable display at the International Exhibition at the London Salon of Photography now open to the public, where the original of the above photograph is on view. Captain Buckham writes: "May

I point out that the photograph shows rather well the somewhat uncommon mammiform type of cloud." Our readers will no doubt remember other striking air photographs by Captain Buckham which have appeared in "The Illustrated London News" from time to time.

THE CRAB AS A GREGARIOUS ANIMAL: A STRIKING EXAMPLE OF NATURE PHOTOGRAPHY IN BENGAL.

SHOWN IN THE 1928 EXHIBITION OF THE ROYAL PHOTOGRAPHIC SOCIETY.



"CRABS ON THE BIDYADHARI RIVER, LOWER BENGAL": A REMARKABLE PHOTOGRAPH BY OSWALD J. WILKINSON, M.Inst.C.E., F.R.P.S.

We in this country are familiar with the crab as a table delicacy, and as a "common object of the seashore" during our summer holidays, but we are not accustomed to crabs in the mass, as shown in this remarkable photograph. It is to be seen in the Natural History section of the Royal Photographic Society's new exhibition, in their galleries at 35, Russell Square, where, as usual, there is a very fine show representing the art of the camera in all its many branches. The catalogue note on the above photograph says: "This species frequents the Bidyadhari

River, Gangetic Delta, Upper Sanderbans, Bengal, in enormous numbers. The river bank, for a considerable distance, was covered in this way." Describing a family of swift land-crabs, the "Royal Natural History" says: "They frequent sandy beaches, and burrow deep perpendicular holes in the sand. At low water they wander over the beach in search of food. . . . These crabs are gregarious. Each has a burrow to itself, and if one tries to enter by mistake the burrow of another, the rightful occupant makes a loud scraping noise to warn the intruder."

THE CAMERA AS RECORDER: NEWS BY PHOTOGRAPHY.



THE CAPTAIN COOK CELEBRATIONS IN HAWAII: ISLAND WARRIORS IN DECORATED CANOES PADDLING OUT TO GREET THE BRITISH AND AMERICAN WARSHIPS.

The 150th anniversary of the discovery of the Hawaiian Islands (originally known as the Sandwich Islands) by Captain James Cook, the famous circumnavigator, was celebrated by various ceremonies and festivities in Hawaii on August 15 and 16. One of these ceremonies was the unveiling of a new monument at a little village in the island of Waimea, off Kauai, near the spot where Captain



A NEW MEMORIAL TO CAPTAIN COOK UNVEILED AT WAIMEA, WHERE HE LANDED IN 1778: SIR JOSEPH CARRUTHERS (BARE-HEADED) LAYING A WREATH.

Cook's ships, the "Discovery" and "Resolution," anchored on January 7, 1778. The warships present off the island on August 16 last were the U.S.S. "Pennsylvania," H.M.S. "Cornwall," "Brisbane" (Australia) and "Dunedin" (New Zealand). The bay swarmed with gaily decorated native craft. Sir Joseph Carruthers is President of the New South Wales Chamber of Agriculture.



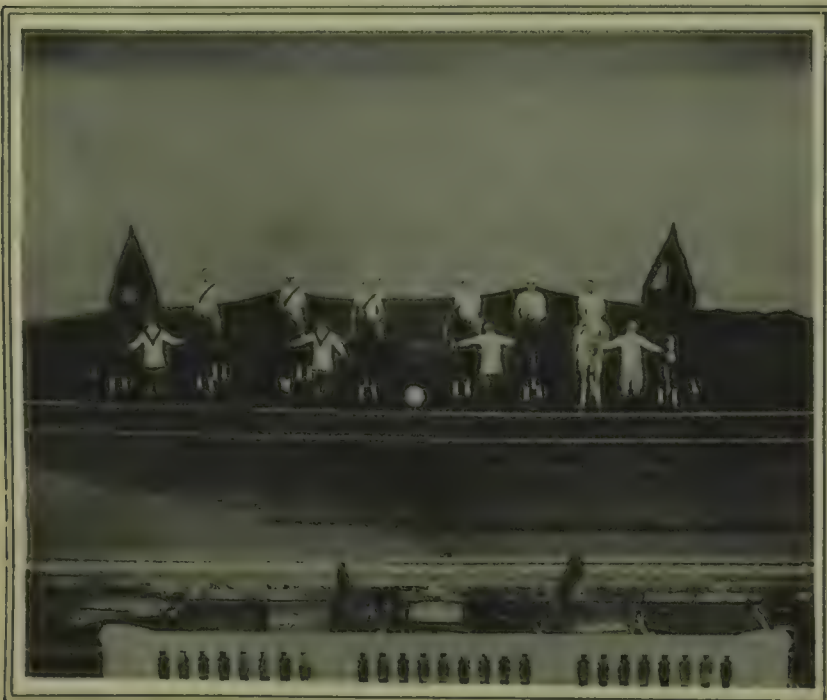
SPAIN CELEBRATING THE FIFTH ANNIVERSARY OF THE PRESENT DICTATORSHIP: A PICTURESQUE PROCESSION IN MADRID.

The demonstration in Madrid on September 13, to celebrate the fifth anniversary of the *coup d'état* which inaugurated the present Dictatorship, was described as the greatest popular pageant ever seen in the city. The procession of representatives of the provinces, from the Retiro Park to the Royal Palace, started at 10.30 in the morning, and continued till past 4 o'clock. General



THE SPANISH "DICTATOR" ADDRESSING A GREAT THRONG IN MADRID DURING THE CELEBRATIONS: GENERAL PRIMO DE RIVERA (MARQUIS DE ESTELLA) SPEAKING OUTSIDE THE ROYAL PALACE.

Primo de Rivera, Marquis de Estella, with members of the Government, watched the procession from the new Ministry of Education, and afterwards took up a position in the great square in front of the Royal Palace. In his speech the Marquis announced that he proposed to ask King Alfonso, on his return to Spain, to declare September 13 a national feast day every five years.



STAGE "POLO" WITH A LARGE BALL: SIX EX-OFFICERS OF THE BRITISH ARMY, WITH THEIR PONIES, REFEREE AND COACH, AT THE LONDON COLISEUM.

The London Coliseum lately introduced a novel and interesting "turn" in the form of an adaptation of polo. No stage in the world, of course, is large enough to present the game in its entirety as actually played. At the Coliseum the "Aero Polo" team consists of six ex-officers of the British Army, who ride eight international ponies from famous polo grounds in relays of



POLO AS ADAPTED FOR THE COLISEUM STAGE: FOUR OF THE PLAYERS, WITH SPECIAL STICKS FOR SCOOPING UP THE LARGE BALL INTO THE SUSPENDED "GOAL."

two aside. The stage is covered with grass matting 75 yards in circumference. The ball, made of aeroplane fabric, is 18 inches in diameter, and a special type of stick is used to scoop it from the ground and strike it into the nets, which are shaped like Association football goals, and suspended in the air. This form of the game brings out skilful horsemanship and the cleverness of the ponies.

AT HOME AND ABROAD: PICTORIAL RECORDS OF NOTABLE EVENTS.



LEADERS IN A VOICELESS BALLET WHICH ENTERTAINED CAMBODIA'S NEW KING: INDO-CHINESE DANCERS IN PICTURESQUE GARB.

Draped in a cloak of gold brocade, Sisowath Monivong ascended the royal throne on July 22, to be invested with the crown and sword of justice of Cambodia by the Governor-General of French Indo-China and the French Resident in Cambodia, in the "Great Hall of the Throne." After presiding at a state dinner that night, the King entertained his guests at a state performance



BORNE ALOFT ON A GILDED PALANQUIN AND PROTECTED BY HUGE CEREMONIAL SUNSHADES: THE NEW KING MONIVONG OF CAMBODIA IN HIS CORONATION PROCESSION.

of the famous palace dancers. The little girl dancers glittered like caskets of jewels; but all their dramatic effects were gained by the lithe and expressive movements of their limbs and bodies, for their faces were powdered dead white, like expressionless masks. On the next day the King made a coronation procession in a golden palanquin through his chief city of Pnom Penh.



"SCOTLAND'S ROYAL OLYMPIAD": THE BRAEMAR GATHERING—A PANORAMIC VIEW OF THE SCENE IN THE PRINCESS ROYAL PARK, WITH ITS PICTURESQUE NATURAL SETTING, WHILE THE SPORTS WERE IN PROGRESS IN THE PRESENCE OF THE KING AND QUEEN.

A unique event in the athletic world, in that it includes both contests of strength and skill in athletics, and grace and nimbleness in dancing, the Gathering at Braemar, which took place on September 13, is unique, moreover, in having the King and Queen as its almost yearly patrons. The Princess Royal Park, besides, provides a "sports ground" that is second to none in its

"ideal natural and heather-clad arena, surrounded by a high cordon of mountains." The Royal pavilion was ornamented with flags and fronted with heather. Before it took place those processions of Highlanders in old-time costumes, armed with their national weapons, pikes, claymores, and lochaber axes, and wearing their tartans, which give the gatherings a supreme historic interest.



INSCRIBED "TO THE FIRST WHO DARED" AN AIR VIEW OF THE NUNGESSER-COLI MONUMENT AT ÉTRÉLAT.

A monument to the memory of Nungesser and Coli, the French airmen who lost their lives in an attempt to fly from Paris to New York, in May 1927, was unveiled on the cliffs at Étrélat on September 16.



THE SCENE OF TERRIBLE DEVASTATION BY A RECENT HURRICANE: AN AIR VIEW OF SAN JUAN, PORTO RICO.

Not only Porto Rico, but the Leeward, Turk's, Virgin Islands, and Bahamas of the West Indies group suffered severely from a hurricane that was described at Porto Rico as the worst the island had ever known. It is estimated that here alone it has caused the loss of 1000 lives, and damage amounting to several million pounds. Nearly half the island's population of 2,000,000 were reported to have been rendered homeless.

THE WORLD OF WOMEN: SCIENTISTS AND OTHER PERSONALITIES.



LADY STUDD.

Wife of Sir Kynaston Studd, who is expected, at the time of writing, to be the next Lord Mayor of London. Daughter of the late Prince Paul Lieven, formerly Grand Master of Ceremonies at the Imperial Russian Court.



MISS HILDA HATT MAKING A HURDLES RECORD.

Miss Hilda Hatt won the hurdles race of the London Women's "Olympiad" meeting at Mitcham. She covered the 80 metres course in 12 7-10 sec., a record for British women. She also won the high jump.



MISS M. A. MURRAY.

Miss Murray spoke at the meeting of the British Association at Glasgow on "The Egyptian God of Death." She is junior lecturer in Egyptology to London University.



MRS. L. HENSHAW.

Mrs. Henshaw read a paper to the British Association on possibilities of the "Transfer of Training," in the section of Psychology. Mrs. Henshaw, who married in July, read her paper under her maiden name of Yates.



MRS. A. P. F. CHAPMAN.

Mrs. Chapman and Mrs. Hobbs, wives of the famous cricketers, arranged to accompany their husbands on their forthcoming tour with the M.C.C. Test team in Australia. Mr. A. P. F. Chapman is the captain of the English visiting team.



MRS. J. B. HOBBS.



MRS. N. L. ALCOCK.

Mrs. Alcock read a paper to the British Association at Glasgow on September 6 on "Seed-Borne Clover Sickness," in the section of Botany.



MRS. H. WILLIAMSON.

Mrs. H. Williamson read a paper to the British Association on "Heterothallism in Humaria Granulata," in conjunction with Professor Dame Helen Gwynne-Vaughan, in the section of Botany.



MISS DIANA FISHWICK BECOMES GIRL GOLF CHAMPION FOR THE SECOND TIME.

Miss Diana Fishwick beat Miss Marion Jolly by 3 and 2 in the final of the Girls' Golf Championship at Stoke Poges on September 13. She is the first girl to win the championship in two successive years.



DR. WINIFRED E. BRANCHLEY.

Dr. Winifred Branchley read a paper to the Botany section of the British Association on "The Phosphorus Requirements of Barley at Different Stages of Growth." Dr. Branchley is a Fellow of University College, London.



MISS M. D. VERNON.

Miss M. D. Vernon read a paper to the British Association on September 11 on an "Experimental Study of Eye Movements. Particularly in Relation to Reading," in the section of Psychology.



MISS M. DRUMMOND.

Miss M. Drummond, who is well known in the educational world, read a paper to the British Association on September 11 on "A Theory of Infantile Experience," in the section of Psychology.

WHERE AN EAGLE LATELY ATTACKED A CHILD: EAGLETS IN THE ALPS.



GOLDEN EAGLETS ON AN ALPINE NEST: A PHOTOGRAPH OF GREAT INTEREST IN VIEW OF A RECENTLY REPORTED ATTACK BY AN EAGLE ON A BABY IN SWITZERLAND.



LIKE "PARSON" ROOK IN "WHO KILLED COCK ROBIN?": A CURIOUS FULL-FACE VIEW OF ONE OF THE GOLDEN EAGLETS ON A PRECIPICE LEDGE IN THE ALPS.



AWAITING ANOTHER DINNER WITH A LEAN AND HUNGRY LOOK: GOLDEN EAGLETS ON A NEST SAID TO HAVE HELD REMAINS OF TWELVE CHAMOIS, BESIDES GOATS AND LAMBS.



SHOWING THE THICK LEGS AND TALONS OF A GOLDEN EAGLET: ONE OF THE REMARKABLE CAMERA STUDIES BY A PHOTOGRAPHER LET DOWN ON A ROPE 150 FEET OVER A SHEER PRECIPICE.

These remarkable photographs were taken by a daring sportsman, M. Brugger, of Meiringen, who was let down on a rope, to a distance of 150 feet, over the sheer face of a precipice in the lonely valley of the Kiental. In the nest with the two eaglets he is said to have seen traces of the remains of no fewer than twelve chamois, besides several goats and lambs. The birds have been identified as belonging to the species of Golden Eagle (*Aquila chrysaetos*). Apart from their value as nature studies, the photographs have a topical interest in view of an incident recently reported from Switzerland. It was stated that at Saas, in Canton Grisons,

a few weeks ago, a royal eagle tried to carry off a baby asleep in a field while the father was working some distance away. He saw the eagle hovering over the the child, and, running up, tried to scare it away by throwing stones. Suddenly it swooped at the child; the man struck it with a stick, and succeeded in driving it off, but was himself knocked down by a blow from one of its wings. The question of eagles carrying off children has provoked controversy. A delightful book on the habits of these birds, in Scotland, is Mr. Seton Gordon's "Days with the Golden Eagle," which describes attacks by eagles on animals and men.

ROME, THE POPE, AND ITALY.

By **SIGNOR GUGLIELMO FERRERO,**

the distinguished Italian Philosophical-Historian; Author of "The Greatness and Decline of Rome," "Ruins of the Ancient Civilisations," etc.

We continue here our monthly series of articles by Signor Ferrero, dealing with world politics as that famous modern historian sees them and interprets them. The views set forth in the series are personal and not necessarily editorial.

NEARLY every year, on Sept. 26, the Holy See finds a means of telling the world that it has not renounced, and that it never will renounce, its rights over the Holy City. It is its way of commemorating the taking of Rome by the Italian troops in 1870. It is probable that again this year it will not omit to reiterate its protest once more. In certain lay circles of Italy, questions with regard to the Vatican are considered as blocked; and they fondly imagine that when relations with the Holy See are improved, the Roman question will also approach its definite solution. For some little time now the Vatican has appeared to be particularly anxious to undeceive these optimists by reminding them that, even if the relations between the Vatican and Italy may undergo a change, the Roman question remains intact. Is it, then, still a living question under the old official form? Has it really been able to withdraw itself from the universal law of change by which life is dominated? Are not new realities capable of exercising an indirect influence on the life of Europe still hidden, even after the lapse of almost half a century, under the uniform formula of those official protests?

We will not reopen the question of the rights of the Church and the rights of Italy which caused such a flow of ink during the nineteenth century. One party cries: "Rome belongs to us; God gave it to us." The other party replies: "Rome is the historic capital of Italy. Italy would not be united without Rome as her capital. We had the right to take Rome, and we have the right to keep her." It is evident that disputes of this nature can never be solved by reason or justice, for each party supposes its definition of its right to be indisputable, while the other party refuses to admit it. In these disputes there is no other right than that of the strongest; but that right can never be regarded by the weaker party as anything but unjust violence before which it is forced to bow. The question can be considered in a more concrete manner. There are about 400 million Roman Catholics in the world who recognise the Pope as their spiritual head. It is obvious that the spiritual head of 400 million people must reside somewhere, under such conditions of dignity and security as will satisfy himself and his followers. Looked at from this point of view, the question of Rome is identified with another question—that of the liberty and independence of the chief of the Roman Catholic Church.

Fifty-eight years after the taking of Rome by the Italian armies, how does that question stand to-day? Here again there are two opposite theses put forward. On one side it is said: "The Papacy was never so free in the exercise of its authority as after 1870." The other side replies: "That liberty is a fact, it is not a right. The chief of the Church has enjoyed freedom up to the present time by a gracious concession of the Italian Government. If the Italian Government changed its opinion, if it were overtaken by Mexican fury, the supreme authority of the Church would be at its mercy. It could crash open the bronze door whenever it wished. Italy has great guns; the Church has none." Both these assertions are correct. Is there any means of harmonising them by transforming the fact into a right? There is not. It is easy to prove that the question is as insoluble in its concrete form as it is in its juridical one.

Let us make the most favourable supposition for the demands of the Church: suppose that an Italian Government gave back Rome to the Pope, and all the territory which the Holy See still possessed on Sept. 19, 1870. In what way would the actual situation be changed? Whether the sovereignty of the Pope begins at the bronze portal or at Civita Vecchia, the disproportion of material forces between the two Powers remains the same. If the Italian Government wished, it could always take back Rome as easily as it could force the bronze door to-morrow. The independence of the Pope would always be guaranteed,

Nations anything but a system of guarantees which the Powers exchange among themselves? Let us suppose that that repugnance disappeared, that the Italian Government should accept a form of international guarantee, would an essential change be produced in the position of the Papacy?

An essential change would be produced if, among the guaranteeing Powers, there were at least one which would or could make war on Italy to oblige her to respect the independence and liberty of the Pope, in case of a revolutionary Government attempting to violate it. If there were no Power which was resolved to employ force in case of necessity, even an international guarantee would be reduced to a moral guarantee, which would be efficacious or inefficient according to the mood of the Power which had accepted it. But I think that it would be difficult to discover among the five continents that "very Christian" State which would always be ready to take up the *gage gesta dei per Francos* if the Church had need of it.

Before the French Revolution the Holy See possessed an important State in Central Italy. That State was protected on the north by a chain of small and medium-sized States which interposed themselves between her and the stronger Powers of Europe. Their armies were small; grand military operations were impossible. The feebleness of the others and the prestige of religion surrounded and protected the Government of the Church like a wall of steel. It required the French Revolution to throw down that wall. But once it was thrown down it was impossible to build it up again. The Restoration attempted to do so in 1815. It was a hurried construction without solid foundations; its system was definitely destroyed in Italy in the second half of the nineteenth century, when a powerful military State formed itself in the peninsula. Up till 1870 the Holy See could, indeed, enjoy the feeble protection of France; and up till 1914 at least hope that in a case of extreme necessity the Empire of Austria would do something for her. To-day the last possibilities of armed protection have disappeared. In presence of Italian strength the Papacy has not and cannot have any other defence in Rome than the respect inspired by its authority. This situation, which is the product of centuries of history, defies all the efforts of diplomatists and statesmen.

Has the Roman question, therefore, been solved by the events which suppressed the object of the dispute? I think it would be more correct to say that it has become identified with that which the Holy See might call "the Italian question." What concerns the Holy See to-day is not the recovery by her of Rome, but that Italy should possess Governments under which a fight to the death between the Church and State cannot break out, for if it broke out in Italy, it would no longer spare the Papacy. It is from that point of view that the relations between Italy and the Holy See have to-day a world-wide importance.

Besides, there is nothing new about this question. From the time of the Reformation, when the revolt of Europe against the Papacy began, one of the dominating preoccupations of the Church was that Italy should remain faithful to her. That effort of the Church to prevent Italy from joining in the revolt against her authority is one of the essential elements of the history of Italy during the three last centuries; without it we could understand nothing. And that effort increased in intensity in proportion as the revolt against the authority of the Holy See spread; especially when France, following the example of

(Continued on page 524.)



THE PICTURESQUE SIDE OF INDIAN SPORT: MOORIAHS IN GALA KIT FOR VILLAGE DANCES—MEN WHO ACCOMPANIED SIR MONTAGU BUTLER AS BEATERS.

These men of the Mooriah tribe accompanied Sir Montagu Butler, Governor of the Central Provinces, during a shoot in one of the Feudatory States. They are seen here dressed in their gala kit, when they displayed their village dances to the tune of brass hunting horns and drums. These people carry bows and arrows with which they kill deer for food. They also attack tigers and panthers. One of the latter—killed by two arrows from a Mooriah's bow—was brought into the camp the day after the Governor and his party left.



AT SIR MONTAGU BUTLER'S SHOOT IN A FEUDATORY STATE OF THE CENTRAL PROVINCES OF INDIA: PART OF A RECORD BAG.

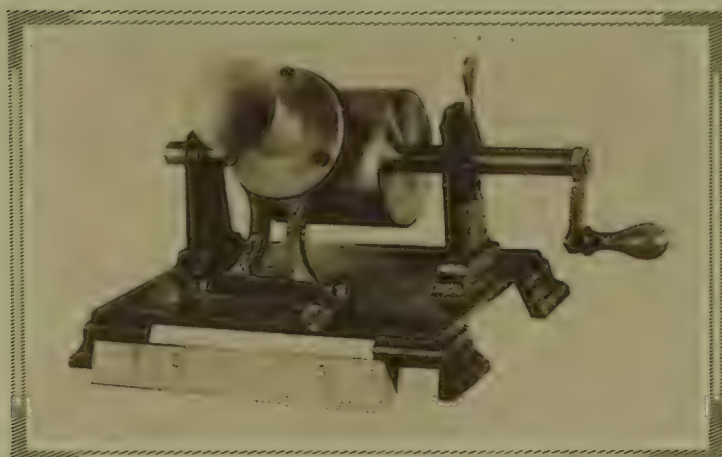
A tiger came out to each of the three *machans* on the first beat of the week. On the following days six more were shot, three of whom were reputed man-eaters. Three panthers were also shot, making a total in seven days of nine tigers and three panthers, of which two and one respectively fell to the Governor's rifle. This was thought to be a record bag for the Central Provinces in the time.

as it is to-day, by moral forces which are more powerful than any number of armies so long as respect for it remains, just as it would be powerless in face of one battalion of soldiers once that respect no longer existed.

This is the reason why different systems of international guarantees have been proposed. The liberal party in Italy have always shown an invincible repugnance for this solution. That repugnance is perhaps exaggerated, and does not seem to accord with the new spirit which has blown over Europe since the war. Is the League of

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THE GRAMOPHONE "BOOM" ON THE STOCK EXCHANGE: EARLY MODELS.



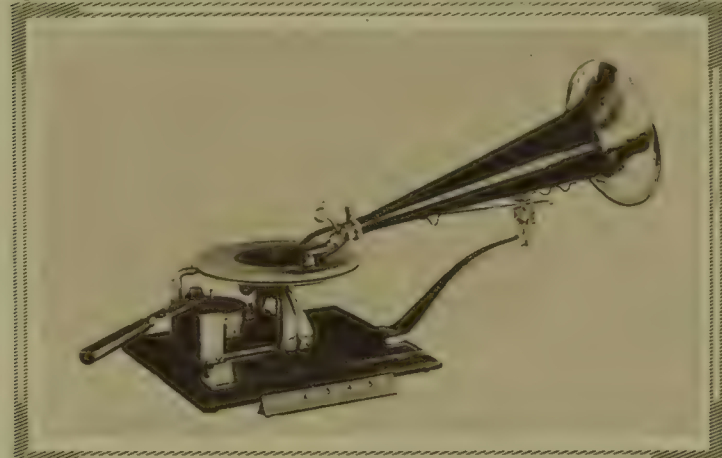
1. 1877: THE FIRST EDISON PHONOGRAPH, WITH A MOUTH-PIECE INTO WHICH THE PERSON RECORDING SPOKE.



2. 1892: THE "DETECTIVE DISC PHONOGRAPH," A FORERUNNER OF THE MODERN "PORTABLE" GRAMOPHONE.



3. 1894: EMILE BERLINER'S HAND-WORKED DISC MACHINE, THE PARENT OF THE MODERN GRAMOPHONE.



4. 1898: AN EARLY SPRING-DRIVEN GRAMOPHONE, DESIGNED BOTH TO MAKE AND REPRODUCE RECORDS.



5. 1899: WORLD-FAMOUS AS A TRADE-MARK: THE FIRST "HIS MASTER'S VOICE" GRAMOPHONE.



6. 1903: AN EARLY MODEL OF A GRAMOPHONE WITH STRAIGHT TONE-ARM AND 12-INCH TURNTABLE.



7. 1905: THE "MELBA" MODEL WITH "GOOSE-NECK" TONE-ARM AND "EXHIBITION" SOUND-BOX.



8. 1920: A NEW DEPARTURE—A "HIS MASTER'S VOICE" GRAMOPHONE WITH LUMIÈRE PLEATED PAPER DIAPHRAGM.



9. 1928: A "GHOST" VIEW OF THE LATEST TYPE OF "HIS MASTER'S VOICE" GRAMOPHONE, SHOWING "RE-ENTRANT" TONE-CHAMBER.

Many of our readers who are radio enthusiasts will be interested to have these photographs before them when listening to the broadcast (announced for 8.45 on September 21) tracing the history of gramophones from the earliest phonograph cylinders until to-day. The models illustrated were lent by the Gramophone Company to a jubilee exhibition of gramophones (1878-1928) held this year at the Science Museum. The following notes on some of them may be added: (1) 1877. The first Edison Phonograph. The person recording spoke into the mouthpiece, and at the same time turned the handle rotating the drum. (2) 1892. "Detective Disc Phonograph." This was a new departure—a 5-inch disc being used instead of the customary cylindrical type. Each record took twenty minutes to reproduce. In its compactness, this primitive machine may be called the forerunner of the modern "Portable." (5) 1899. In spite of its age, this, the first "His Master's Voice" gramophone (the

direct successor of No. 3) is perhaps the best-known type in the whole world, because it appears as part of the famous Trade Mark on every record and instrument manufactured by the Gramophone Company, Ltd. (9) 1928. With the development of electrical recording, an instrument had to be designed which would give full effect to the records made by this process. In 1925 the Gramophone Company introduced their models with the No. 4 sound-box and a new type of tone chamber. These have now been superseded by the type shown. A new "all-metal" sound-box is fitted, and by a system of scientific folding and division, an internal horn of much larger dimensions is obtained than was possible formerly. This particular type, known as the "Re-entrant" "His Master's Voice" Gramophone, of which a "ghost" picture is shown, is the result of applying modern scientific knowledge to the problems of sound-recording and reproduction.

The World of the Theatre.

By J. T. GREIN.

ON STAGE NOISES.—THE YOUNG GENERATION.

WHAT a babel of noise the thriller-mystery play which has invaded our theatre lately has brought in its train! Atmosphere is the excuse. The setting must be strange, forbidding, ominous. The mystery-monger does not deal with normalities in the broad light of day. Scenes isolated from the usual current of existence form the background of his manufactured terrors. This must be emphasised and underlined, and so he calls in the batteries of noise. After the curtain is raised and the green lights are turned on, weird sounds come up in a mournful crescendo from the orchestra and, after a clash of cymbals, fade away in a wail of minor keys. Through the wings come whistling omens, and the tin tray clatters busily, endeavouring to increase the effect. Pistols crack out their doom and shrieks follow; fireworks fill the stage with sulphurous smoke; and, for three acts, we endure all sorts of alarms and excursions.

The use of sound to strike terror into our hearts has its justification. Its appeal is more subtle than anything which only strikes the eye. The "porter's knock" in "Macbeth" is infinitely more devastating than the dagger in the air. Dostoevsky, in "Crime and Punishment," makes a masterly use of the terror which sound can inspire. The murderer hears the steady, rhythmic tread of the policeman in the street below. He cannot see, but the step comes nearer and nearer, and then, after a momentary halt, he hears it coming up the stair. All the tortures of an accusing conscience, the fears of discovery, the agonies of mind which that relentless step causes, the novelist has set down. But the key to this dramatic situation lies in the character of the trapped man. After all, what are all these tricks of production but accessories? They can only be "effects" when we believe in the characters. They can only thrill when drama is happening. Not all the green lights, the noises on or off stage, and the ingenuities of the producer can make it happen. A firework display is not drama.

The failure of so many thrillers is due to the fact that the accent is in the wrong place. All these elaborations cannot hide the poverty of thought and the lack of creative ability of the authors. A stage carpenter cannot make a play. There must be the dynamic energy of characterisation to command our sympathies and rivet our attention. Unless the actors have the material which they can quicken into life, not all their hustle, their simulated panic, nor their shrieks of alarm can quicken a pulse. The medium of the playwright is language; and the words of drama, whether they be rich and plenteous as poets use, or economical and prosaic with the accents of common speech, must be significant. Then dialogue is revelation, and the business of production is to give that revelation its full value. The machinery of effects can rightly be used in such a case, because drama is happening; though even then it should be used carefully and intelligently. Any effect which obscures or disturbs the drama is inimical to the play. It destroys the illusion of reality. It is hopeless for the theatre to try and compete with dog-racing and the dirt-track in providing mechanical thrills. There is an object-lesson in the puppet-show at the Scala, where the marionettes delight us because they touch the imagination. Here we can

pretend, and, with the simplest accessories, they get the most vivid effects. The "thriller" leaves nothing to the imagination. It tries to realise every terror, ignoring the truth that the mind creates its own hell. There is no room for pretending, no opportunity for make-believe. The acknowledged masters in the art of thrillers have never made that mistake. By subtle hints, by shadowy suggestion, by restrained methods which always leave so much unsaid, by cumulative strokes of observation, and by concentration on the characters, acting and re-acting, they weave their spells. Henry James can create more terror in a chapter than the theatrical producer who has only stage-effects to rely on can produce in an evening. Nay, without drama there can be no grip. The play's the thing to catch the conscience, not fireworks, spot-lights, and the rattle of the tin tray.

The Children's Theatre has taken root in Endell Street. On the opening day that usually quiet corner in London, off the map, yet in the centre, was lively with a file of motors and a throng of children—many

remarks loudly exclaimed, of "howlers" which make parents blush, or—more often—embarrassing questions which dumbfound a sweet young mother because she does not know or not know what to say? For that is the fun of the Children's Theatre; there are two plays going on at the same time—one on the stage, of course; the other, no less effective, in the auditorium. As soon as Miss Veronica Cook opens her "upright," kiddies cluster round her, take up the tune and form a little chorus of humming, buzzing, yelling voices. Then, suddenly, the folds of the curtain display a pretty girl's face in a frame of drapery and the shout goes: "Item Number One!" Then a hush—all the children are dumb; the little mouths have ceased to speak, but the eager eyes tell tales of keen expectations.

They have a wonderful knack at our Children's Theatre of selecting their programme; they know exactly what children want. They rightly think that, in our time, it is not necessary to descend to childish stuff to appeal to the juvenile mind. They know that they love tales of bravery, of romance, of adventure—they know that they can tell them a good story in which knights, soldiers, and sailors

fight for their country or vie for the favours of a pretty damsel. And so they give them little idylls like "Honey Pots" or "Lubin Loo," or sagas like "The Knight from Spain" or "The King's Messenger," or sea chanties in which there is a touch of history, of knightly gallantry, and such melody as stirs the emotions or kindles pit-a-pat in small hearts. And in every song the picture is a little work of art, of imagination, and of colour. The three Shelleys, Norman, John, and Frank, who sketch the settings and make the costumes, and Miss Maud Jolliffe, the stage-manager, have a rare knowledge of stage-craft. Some of the scenes, with the greatest simplicity of means, obtain such effects that for the moment the tiny stage would seem transformed into a sumptuous display in a big theatre where they spend ten times as many pounds as they can afford pence at the Children's Theatre. And clever players they have, too: the fascinating Miss Peggie Robb-Smith, the winsome Maud Jolliffe, the clever character-actress Miss Joan Luxton herself; and, among the men, Vivian Beynon, Norman Shelley, and, above

all, Geoffrey Wincott, ubiquitous, versatile, the directors' right hand, the inspiring force of all these players who revel in their work and apply to it a finish which need not fear comparison with the best revues in town.

What the Children's Theatre needs at present is a supply of plays. Now and again Miss Margaret Carter hits upon a happy thought that makes excellent fare. But the range of playwrights devoted to the children's cause is narrow, and Miss Luxton would be very happy if readers of the World of the Theatre in the many countries where this journal is at home would send her plays suitable for the young generation. Anon, I understand, there will be a Prize Competition for a "Children's Play"—an excellent idea, and one that ought to bear fruit. Meanwhile, let us hope that the Children's Theatre will repay the enterprise of the Luxtons, and find such support from all quarters that it will become an institution.



HOW THE SQUEAKING OF A TRAIN'S BRAKES (HEARD "OFF") IS PRODUCED: A STAGE HAND RUBBING TWO TUMBLERS ON A SHEET OF FLAT PLATE GLASS.

In face of the demands of many modern plays, which depend for their effect on the forcible realism of machinery, a branch of dramatic science for reproducing mechanical noises effectively and simply has arisen. Above is one of the elements which go to make up a theatrical train "off." Other examples are illustrated and described on the opposite page.

of them with beaming faces trooping through the doors; more watching sadly the excitement that, for want of pennies, would be denied them unless a grown-up patron handed them a coupon. For Miss Joan Luxton, her partner, Miss Agnes Lowson, and her parental patron, Mr. Luxton (to whose largesse the Children's Theatre owes its existence), wish that it should be the pleasure of all children without distinction of class. And so they have fixed the prices so low that they fit the purses of Drury Lane as well as those of Mayfair. A threepenny-bit opens the gates of this children's paradise; and if you happen to have a coupon-book, price one guinea, you can exchange them for stalls at 5s. 9d. or for children's tickets for the smallest coin of the realm. Fancy it—more than eighty children whirled into three hours' happiness for a guinea! Could any well-to-do reader resist such an appeal to his or her kind heart? Does not the very thought sound the echo of happy voices, of trills of laughter, of quaint

REALISM IN SOUND BEHIND THE SCENES: RAILWAY NOISES "OFF."



PRODUCING SOUNDS OF A TRAIN: (1) A "BATTERY" OF DIN, INCLUDING A COMPRESSED-AIR CYLINDER (RIGHT) FOR HISsing STEAM; (2) DRAWING A ROLLER OVER STICKS, AND (INSET) THE CAUSE OF THE "SOUND" THUS REPRESENTED.

In connection with Mr. J. T. Grein's remarks (on the opposite page) about the babel of noise in "thriller" plays, it is interesting to see how railway sounds, for example, are produced behind the scenes. These particular appliances, it may be mentioned, were used at a recent revival of "The Ghost Train" at Munich. "Behind the stage," says a German writer, "one sees a number of men operating strange machines, under the direction of a supervisor. First there is a small projector apparatus, through which a man draws a strip of cardboard, with a series of holes, which appear on the screen as the lighted windows of the train. Another stage hand stands beside a cylinder of compressed air, which is released

to imitate the sound of steam. With his gloved hand the man varies the sound emitted from the horn attached to the cylinder. A third produces other steam sounds with a wire brush on a drum; while a fourth operator draws a heavy garden roller over a number of three-cornered sticks nailed on the floor. The 'bumps' represent the gaps between the rail sections. Another man has a sheet of glass placed on two chairs, and with two tumblers produces those ear-splitting squeaks made by brakes: A metal box full of screws and bits of iron is shaken to imitate the clash of buffers. A real locomotive whistle, blown by compressed air, and sand-paper rubbed on a smooth surface, produce the hiss of a departing train."



THE FINE ART OF COLLECTING.

XXX.—OLD NAVAL PRINTS: A SUBJECT OF DIVERSE AND FASCINATING INTEREST.

By ARTHUR HAYDEN, Author of "Bye-Paths in Collecting," "Chats on Old Silver," "Old Sheffield Plate," etc.

boys sang "a song lately introduced . . . and when they come to the words 'Brave Broke, he waved his sword, Crying now my lads aboard' . . . you expect the roof to come down."

Another extremely rare print is "The Arrival of the *Sirius*, 1838," at New York. She was a small coasting vessel, and set out from Cork to race the *Great Western*, of Bristol, to make the first crossing of the Atlantic, and came in a winner by five or six hours. She was commanded by Lieutenant Richard Roberts, R.N., who had served as a midshipman under Nelson. "A great rarity in my collection," says Mr. Macpherson, "is the small aquatint of the *Curaçao*, now generally accepted as the first bonafide steamship to cross the Atlantic. The

found quite at the end of the nineteenth century in the four-masted steel barque, often of Swedish origin, which was exquisitely graceful and of fine speed. This type, still in evidence, traded to Australia

THE collection of old naval prints has, during the last twenty years, made an international appeal. Since the practical disappearance of great sailing-ships from the maritime highways of the world, a wistful heart-aching has overtaken the modern observer in regard to the æsthetic loss of the glorious fleets that sailed across the Atlantic or the Pacific, rounded Cape Horn, gallantly followed the trade winds and monsoons, were disquieted by the doldrums (the latter a factor unknown to steam-propelled vessels), and made runs in competition with each other.

The British race is naturally proud of its naval feats, and both in this country and America great interest has been taken by collectors in the pictorial records having a common interest for both nations. It is impossible to speak of naval prints without referring to that wonderful collection formed by Mr. A. G. H. Macpherson, consisting of no fewer than 11,000 items, which collection, valued at £90,000, is, by the generosity of Sir James Caird, Bt., to be presented to the nation and housed at the "Queen's House," Greenwich, which will in future be known as the National Maritime Museum.



FIG. 2. THE FAMOUS CLIPPER SHIP "SUSSEX": ONE OF THE LAST OF THE CELEBRATED MONEY WIGRAM SMART FRIGATE-BUILT SHIPS FROM THEIR BLACKWALL YARD, KNOWN AS "BLACKWALL FRIGATES"—A CONTEMPORARY LITHOGRAPH.—[Photograph by Courtesy of the Parker Galleries.]

copy in my collection is the only one I have come across. I have still to be shown a genuine print of the celebrated *Savannah*, if such a thing exists. Nor have I yet been able to acquire the rather crude lithograph of the little *Sirius* which just beat the *Great Western* across to New York." This little vessel was partly propelled by sail.

and brought wool to Europe. At a slightly earlier date were the three-masted clipper ships made at the Money Wigram yard at Blackwall. The famous *Sussex* is illustrated (Fig. 2). It was quite an ornamental device to decorate the hulls with some simulation in black and white of the ports of the frigate. They were termed "Blackwall Frigates," and were of such interest that a volume has been devoted to them by Lubbock. There is also the famous *Lincolnshire*, one of the last of these ships, built at Blackwall in 1858 of teak, oak, and elm, and copper fastened and sheathed.

There is one interesting sailing-ship which made a pretty record, the Chinese junk *Keying*. She was the first Chinese junk to appear in British waters. Bought in Canton in 1846 by a party of Englishmen, she was then believed to be a hundred years old. The *Keying* was a solid craft of some 700 tons. Her rudder was a ponderous affair of some seven tons, which came about twelve feet below the keel. In rough weather

[Continued on page 528.]



FIG. 1. THE FIRST CUNARDER: THE PADDLE-STEAMER "BRITANNIA" LEAVING BOSTON, IN 1840, THROUGH A SEVEN-MILE CHANNEL CUT IN THE ICE.

The paddle-steamer "Britannia," built in 1840, was the pioneer ship of the Cunard fleet. This old lithograph shows her being cut out of the ice at Boston, where the citizens made a channel seven miles long to enable her to reach the open sea—an undertaking paid for by the merchants of Boston.—[Photograph by Courtesy of the Parker Galleries.]

It is of interest to note the stages through which a great collector passes, and these same processes will without doubt appeal to latter-day collectors in somewhat the same order. At first he may seek prints of old clipper ships, and then of steamships and yachts. Then he purchases naval actions and war-ships, followed by views of seaports and portraits of great naval commanders and explorers. Finally, he sets about to make a representative set of old atlases. With such a diverse area the subject must obviously be one of great and enduring fascination. At the present moment there are a large number of collectors in this country and in America who are assiduously snapping up old naval prints of the various types above mentioned. American collectors are drawn more to subjects such as "The Naval Action between the *Chesapeake* and the *Shannon*." Of this there is a set of four coloured lithographs by Louis Haghe, after the paintings by J. C. Shetky, published in 1830. Another rare version of this subject is found in a pair of coloured aquatints by J. Jeakes, after J. T. Lee, and G. Webster, entitled "H.M.S. *Shannon* Boarding the *Chesapeake*," and "H.M.S. *Shannon* Carrying the *Chesapeake*." Naturally, too, there are the portraits of Captain Sir Philip Broke, commander of the British ship, and of Captain Lawrence, of the *Chesapeake*, the indomitable-hearted American captain. We remember "Tom Brown's Schooldays" at Rugby, where as a new boy he sang the old West-Country song of "The Leather Bottel," and how the

The term "clipper" appears to be of American origin. The "Baltimore clippers" were famous as fast-sailing privateers in the early wars of the United States. Speed was the ideal they aimed at. The bows were finely modelled with tapering form, and the whole lines scientifically designed to attain swift sailing at its maximum. The China tea-clippers are well known. They were at their zenith in the middle of last century. They were also employed to carry emigrants to the Colonies; they were the fast traders of the great Mercantile Marine plying on the trade routes, and not obliged to carry heavy guns. The latest development is



FIG. 3. THE FIRST CHINESE JUNK SEEN IN BRITISH WATERS: THE "KEYING," WHICH SAILED FROM CANTON TO GRAVESEND VIA THE CAPE AND NEW YORK, IN 1846-48. The Chinese junk "Keying" sailed from Canton in 1846, under Captain Kellett, with a crew of twelve Englishmen and thirty Chinese. She reached St. Helena, rounded the Cape, crossed the Atlantic, put into New York, and, re-crossing the Atlantic, reached Gravesend on March 29, 1848, after a voyage lasting seventeen months. The "Keying" was the first junk that ever rounded the Cape or appeared in British waters.

"CATS" NOT TO BE FOUND AT ANY CAT SHOW.

PUSS AND SOME OF HER COUSINS : BIG "CATS" AT THE "ZOO."



THE PUMA (*FELIS CONCOLOR*), OR COUGAR.



THE LEOPARD (*FELIS PARDUS*), OR PANTHER.



THE JAGUAR (*FELIS ONCA*): THE LARGEST AMERICAN CAT.



THE BAY LYNX (*FELIS RUFA*), OR AMERICAN WILD CAT.



THE PERSIAN LYNX: AN ASIATIC VARIETY.



THE NORTHERN LYNX (*FELIS LYNX*).



THE LION (*FELIS LEO*): THE KING OF CATS.



THE CHEETA (*CYNOLURUS JUBATUS*), OR HUNTING-LEOPARD.



THE DOMESTIC CAT.



THE TIGER (*FELIS TIGRIS*).

"Under the general title of cats" (says the "Royal Natural History") "it is found convenient to include the extensive family of the *Felidae*. . . Lions, tigers, leopards, jaguars, pumas, lynxes . . . are all designated Cats." The "harmless necessary cat" (lowest centre illustration) is here compared with some of its big cousins at the "Zoo." "No group of animals," writes Mr. Neville Kingston, who took the photographs, is more popular than the cat tribe, over forty species of which are known. Though differing greatly in size,

they are much alike in build; for a black leopard is almost similar to a black cat, except in bulk. . . . Lions are mostly found in Africa, tigers are confined to Asia; while the puma and jaguar have their habitats in North and South America respectively, and a host of smaller species live in the larger islands and archipelagoes. Although their grace and marking make them beautiful, their tempers are uncertain; and few of the species can be kept in a docile state when they reach maturity."

Fashions & Fancies

TEAGOWNS AND LINGERIE FOLLOW THE FASHIONS AS CLOSELY AS THE EVENING FROCKS THIS SEASON, AND PICTURED HERE ARE THE LATEST VARIATIONS.

The Mode in Teagowns.

The same dipping hemline which is apparent in evening frocks appears also in the new season's teagowns. Sketched on the left of this page, for instance, is a model in blue-and-gold brocade, with a scalloped skirt dipping at one side. The lining of the train and underslip is of sapphire-blue satin. This is to be seen at Marshall and Snelgrove's, Oxford Street, W., where there are always many lovely models. There are several cut rather on the lines of an elaborate coat with dipping points and draperies, carried out in brocade trimmed with fur. Coloured open-work metal embroidery borders another, expressed in coral satin with a coatee of net lace embroidered with gold thread. Then there are useful tea-frocks at very moderate prices. For instance, the one here in mauve taffeta laced with silver ribbon is 8½ guineas, and there are others in taffeta from £5 19s. 6d. Lace frocks with coats to match can be obtained from £5 19s. 6d. the two, and a useful affair in crêpe celestine can be secured for 59s. 6d., complete with long sleeves.

Petticoats for All Occasions.

There are some very special petticoats of printed shantung in delightful colourings and designs offered at the surprisingly low price of 12s. 9d. at Marshall and Snelgrove's. It is an opportunity which is not likely to recur. There are also princess slips of very heavy crêpe-de-Chine available for 20s., those with round necks and armholes being no dearer than the opera-topped variety. Short petticoats for golf, in heavy milanese, can be obtained for 29s. 6d., in soft shades of brown, fawn, and pinky-beige; and there are pretty floral printed crêpe-de-Chine slips available for 39s. 6d., with loose-leg knickers to match at 35s. 9d.

The Nightdress à la Mode.

Even the nightdress is cut on the same interesting lines as an evening frock this season. Sketched below is one of the newest models to be seen at Harvey Nichols, Knightsbridge, S.W. Carried out in pink georgette, it has the fashionable dipping



Blue-and-gold brocade lined with sapphire tinted satin is used to express this lovely teagown from Marshall and Snelgrove's, Oxford Street, W.

The Vogue for Chenille Lace.

Chenille is playing an important part in the season's fashions. Not only is it appearing in the latest evening shoulder flowers as tiny "polka" dots on coloured net, but the very newest evening frocks are made entirely of chenille lace embroidered on net. The effect is a blending of brocaded georgette and printed ring velvet, but with a more decorative surface, and even more supple substance. One very lovely frock created by Bernard is of chenille lace in a real pillar-box red. There is not a single ornament, save a chenille spotted net flower in the same colouring; but the frock falls in beautiful long, clinging lines in front, while at the back a drooping bow of the same material, edged with ring velvet, is kept in position by a miniature bustle of horsehair underneath the skirt. Another very charming frock, by Miller, introduces a flounced hem of this chenille lace. Brilliant emerald green is an unusual colour, used by Bernard in a frock of moiré with the skirt cut in overlapping tiers adorned with a single ornament in strass. Ninon brocade is another fashionable material this season, and is chosen by Molyneux for a lovely dress and coat in silver and soft pastel tints with a suggestion of black. The cuffs and hem of the coat are of fur. These smart models are included in the collection to be seen at Debenham and Freebody's, Wigmore Street, W., where there are always delightful representatives of every variation of the season's fashions, interpreted by famous designers.



A simple little thé dansant frock from Marshall and Snelgrove's, expressed in cyclamen taffeta laced with silver ribbon. The skirt is composed of separate scalloped panels, giving a new line.



Following the fashion of the dipping evening frock is this latest nightdress at Harvey Nichols, Knightsbridge, S.W. It is carried out in pink georgette and lace with vest and knickers to match. The lace boudoir cap is completed with a spray of pink and blue flowers.

back and is fitted to the waist. The price is 69s. 6d. The vest to match, edged with scalloped lace, and the knickers, made with a flat hip-band, are each 49s. 6d. In these salons, a great point is made of these short dancing knickers with flat fitting hip-bands, fascinating affairs in crêpe-de-Chine and georgette, available from 29s. 6d. At the same price is a large choice of crêpe-de-Chine nighties, some with charming net collars and hems. New backless cami-knickers for the evening are £1 19s. 6d. Coloured lace to match the silk is a feature of the new lingerie fashions.

A Tonic for Complexions.

Every skin needs a tonic to keep it healthy and to protect the pores and tissues against the constantly changing temperatures. If your skin is in good condition, the complexion becomes naturally smooth and lovely. There is a splendid skin tonic which really reaches underneath the surface and cleanses, invigorates, and tightens up the muscles wonderfully. It costs only 3s. 6d. a bottle, and should be used constantly at all seasons. Not only does it prevent undue flushing in an overheated atmosphere, but at this time of year it has the special advantage of routing that unattractive greyish tinge caused by fading sunburn. To all readers who apply to this paper, I shall be pleased to give the name and address where this excellent preparation is procurable. It merits a place on the toilet table of every well-groomed woman.



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THE CHRONICLE OF THE CAR.

ON STANDARDISATION.—THE WOLSELEY
"TWELVE."

ONE of the most useful and sensible actions of the Society of Motor Manufacturers and Traders since its inception was the issue, a short time ago, by their Standards Department, of recommendations for the standardisation of car-controls. They have urged the makers of the Society to adopt standard arrangements for gear-lever movements, brake and accelerator, and ignition and hand throttle control lever positions, so that, so far as possible, the driving of every car will be the same.

There has been nothing quite so idiotic or irritating in the detail work of car-design as this lack of standardisation. It is quite true that anyone with the slightest mechanical instinct will familiarise himself with the control positions of his new car fairly soon. If he could not, he would *ipso facto* join the swelling brigade of those who should never be allowed to drive at all. That is not the point—which is that needless complication or stumbling-blocks of whatsoever kind should have no place in the hundreds of thousands of cars which are yearly being put into the hands of owners who have every right to expect and insist upon their machines being as easy as possible to handle.

Gear-Lever Positions.

The Society's recommendations as to gear-lever positions are, to my mind, the most important.

For either three or four-speed boxes, whether with central or right-hand control, they urge the adoption of top-speed position outside (*i.e.*, on the right) back, with third or second outside forward. As these two gears are the most often used, it is sensible to arrange them so that, in the case of a centrally-controlled box, the lever will be furthest from the possibly trespassing leg of the passenger, and, in the case of a right-hand box, furthest from the driver's leg. In the three-speed box the first speed notch lies next to top speed, with reverse opposite. Second speed in the four-speed box lies next to top, with first opposite. Apparently makers can please themselves about the position of reverse.

A Wise Recommendation.

Very wisely the outside position for the accelerator pedal has been recommended; that is to say, on the right of the brake-pedal. I am very sure that this is a far more "natural" arrangement than the central position, below and on a line between clutch and brake pedals. It is much easier to shift your toe quickly from left to right, pivoting your foot on your heel, than to move your foot, heel and all, from left to right. And it is important that we should be able to do everything connected with car-control as swiftly as possible these days.

The Society recommend the throttle lever to be on the right, and the ignition lever on the left of the steering-wheel quadrant, the "open" and "advance" points being in each case at the top end of the travel. Not everyone may agree with all these recommendations. For myself, I would rather have top-speed engaged forward, and "advance" and "open" at the bottom, and I believe a good many drivers will agree with me. Yet it is an encouraging sign that a real effort has been made to abolish a source of trifling but very real irritation to every buyer of a new car.

A Distinguished "11'9."

It is a long time since I have enjoyed a trial-run so much as I did one I had recently on a four-cylinder Wolseley "Twelve," sent to me by Car Mart, Ltd. This car is one of the latest recruits to the historic 11'9-h.p. class, and I believe it will prove to be one of its most distinguished. Its price, for the six-windowed fabric saloon, is £300 (the tourer is £265), and I can honestly say that I have seldom come across a car of this type so good at anywhere near the price.

Wolseley Neatness.

Outwardly, its most striking feature is its workmanlike neatness—an endearing quality, to my mind. The engine, with its overhead cam-shaft valve gear enclosed in the slimmest of covers, its crosswise-driven dynamo and magneto, both really accessible, and, above all, its easily-reached oil-filter, is a thorough engineering job. It is an engine in which to take real pride. It is finished in the

same admirable way throughout, from dashboard to steering wheel controls, and unusual care has been expended on the lines of the bodywork. It is a very attractive car.

A Fine Gear-Box.

The four-speed gear-box is another feature I like. It is geared for people who like driving for driving's sake, and who want to get the best out of their engines. Top-speed is rather low, at 5 to 1, but third is exactly right at 7'6 to 1. You can get over 40 miles an hour on this third, and well over 50 on top. If you use that third as it is meant to be used, as an aid and support of fourth, you will find that the Wolseley puts up a very good average speed.

The engine runs almost noiselessly, idle, and very quietly at high speeds. Such crank-shaft vibration as exists is very slight, and only just perceptible at about 45 miles an hour. It is one of the gentlest engines of its class I have ever driven, yet it is full of life. The acceleration, using second, third and top, is very good indeed, especially if you remember to make full use of third.

The little car is well sprung, and the steering is delightfully light and steady. I think its comfort would be improved if a spring steering-wheel were fitted, an inch or two more in diameter than the present one. Gear-changing is easily and noiselessly done, in either direction, and the gears make surprisingly little hum, even in the closed coachwork. It is another feature which distinguishes this new 11'9, a car out of the ordinary.—JOHN PRIOLEAU.

New Morris Prices.

The prices of 1929 Morris cars range between £125 for the new £8 tax Morris Minor tourer, to £375 for the 17'7-h.p. Morris "Six" saloon. The 11'9-h.p. Morris-Oxford, which was re-introduced last year, has been dropped again, but the 15'9-h.p. overseas model, now known as the 16-40-h.p., has been added with new forms of coachwork. The Cowley models now cost from £160 for the two-seater to £190 for the saloon, and the 14-28-h.p. Oxfords from £200 for the two-seater to £265 for the saloon *de-luxe*.



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seven. Perfectly finished and appointed. A car with a wonderful road performance and unique smoothness and silence, the qualities which have made it the choice of distinguished owners throughout the Empire. Price £875.

Other 20'9 h.p. models: Tourer, £675; Fabric Saloon, £720; "Aero" Saloon, £750; Saloon de Luxe, £795; Enclosed Landulette, £895. The famous Super Six Fabric Saloon, £795—the most distinctive Fabric Saloon on the road.

ASK also for details of the new 15.7 h.p. Crossley "Shelsley" model, the most remarkable medium-powered Six on the market. A car of advanced design and phenomenal performance. Touring Car, £495; Fabric Saloon, £550; Coachbuilt Saloon, £575; Enclosed Limousine, £595. All with comprehensive equipment.

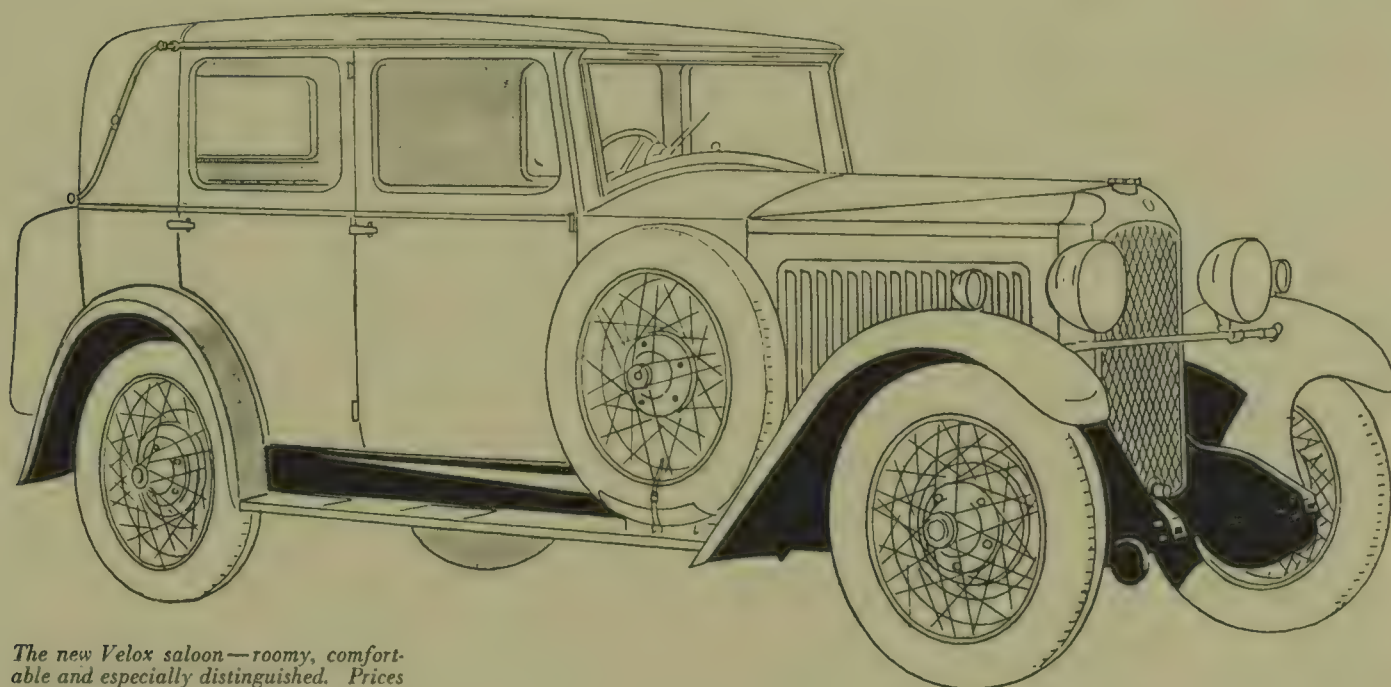
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ROME, THE POPE, AND ITALY.

(Continued from Page 514.)

England and Germany, also revolted at the time of the French Revolution. That Revolution once more increased the value of Italian fidelity for the Church. The Papacy supported the treaties of 1815 with all the energy of which it was capable, especially because it seemed to close Italy for ever from the ideas and institutions of the French Revolution. It was one more illusion which was not destined long to survive the Revolution of 1848. Again, in 1860, the patrimony of St. Peter was invaded, but the sacrilegious armies were no longer French; they now came from the north of the peninsula. For the first time all Italy was subjected to one Government, which suppressed the last religious fraternities, despoiled the Church of the riches which remained to it, recognised liberty of the Press and of thought; in one word, transformed the State into a lay one. For a moment it was thought that the long-dreaded event, the revolt of Italy against Rome, with its extreme consequence, the impossibility for the Papacy to remain in the peninsula, which had become an enemy country, was about to happen.

Nothing of the kind occurred. The revolt stopped directly after the taking of Rome. The two adversaries came to a tacit agreement by sharing the country and dividing it into a liberal zone of influence and a Catholic zone of influence. For the first time since the fall of the Roman Empire, Italy was politically united during the years between 1860 and 1870. But, by one of those tragic contradictions of which life is full, she was more morally divided than she was immediately after the political unification. From 1860 to 1914 there were two Italies, Liberal Italy and Catholic Italy, who were enemies but did not fight; they ignored and boycotted each other. Each one had its hierarchies, its social life, its newspapers, its associations, its coteries, its literature, its schools, its fêtes, its ceremonies, its great men, and its own economic interests. There were certain contacts: Liberal Italians, still with but few exceptions, had their children baptised, and their marriages and funerals blessed, by the Church; but, that homage once rendered to the faith of their ancestors, they rejoiced in everything that could do harm to the Church, weaken its authority and diminish its influence. Catholic Italy had, alas! to pay tribute to Cæsar and serve in the Army; and she did not have any scruples in profiting by the union of the State, whenever she could; but she refused to share in the responsibilities of the new politics, and saw, not without a certain pleasure, the difficulties with which the Liberal régime had to struggle. Ingenious as it was and subtle, that system of division had certain advantages both for the State and for the Church. For sixty years the State was spared the dangers and troubles of Clericalism, and the Church was equally immune from

the dangers and troubles of Anti-Clericalism. That was the incomprehensible mystery which puzzled the French at the beginning of the century: how was it that, in a country where the State was encamped as a conquering enemy opposite to the Church, there was nothing resembling the struggles of the Clericals and the Anti-Clericals by which France was at that time troubled? The explanation of the mystery lay in that tacit armistice which the State and the Church had made after the taking of Rome.

I do not know whether that tacit partition so convenient for the State and the Church was equally useful for the country. It is even my opinion that that passively hostile schism was our great weakness in 1870. A struggle is sometimes a paradoxical form of collaboration. Two parties that struggle arduously in a country mutually teach each other activity and energy; their growing strength may in the end become a definite acquisition for their whole country. Two parties that boycott and suffocate each other are a cause of mutual weakness. Each one wishing to act solely in its own strength, the two Italys had each too narrow a base from which to work out aims worthy of the one or the other. And the country seems to have felt it, for the movement which during the last thirty years has drawn the two States together sprang from that cause.

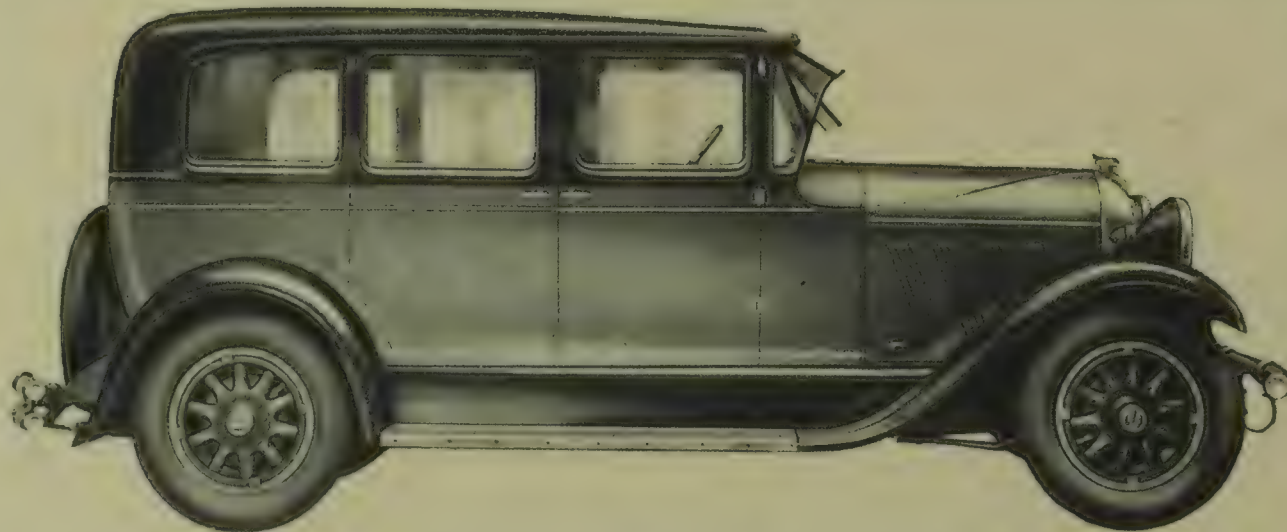
The hatreds of 1848 and of 1860 have softened with the advent of the new generations. No longer growing in an atmosphere of battle, Liberal Italy began to perceive that the country was still Catholic, and that a national State could not be established to the exclusion or with the abstinence of the majority of Catholic Italy, and felt itself tempted by the new political, intellectual, and social life which was introduced after 1860. The conquerors understood that ten centuries of history could not be suppressed in a few years; and the conquered were obliged to recognise the definite results which had been achieved after 1848. If Liberalism could not pretend that the history of Italy began with its advent, neither could Catholicism hope by the mere power of its will to arrest the development of Liberalism indefinitely by passive resistance.

The awakening of the masses, which, indoctrinated by Socialism, threatened to revolt against Liberal and Catholic Italy simultaneously, contributed to make both sides reflect. The World War, by mixing and opposing classes and parties, activities and resistances, illusions and deceptions, interests and doctrines, precipitated the movement. The two Italys can no longer ignore each other to-day or live each on its own account, as if the other did not exist. The cross-grained and distrustful condominium of the second half of the nineteenth century is at an end; that is for Italy the most serious consequence of the World War.

The country can no longer be amicably divided between two opposing forces; either those forces must come to an understanding and govern together, or they will be obliged to struggle for supremacy—that is to say, to penetrate into what each kept behind closed doors before the war.

That is why for the last ten years the two Italys have found themselves staring at each other in a state of anxious perplexity. To come to an understanding is difficult. What obstacles visible and invisible, recollections, traditions, collective pride, crystallised distrust, doctrinal divergences, moral incompatibilities, and irrepressible rivalries oppose themselves even to an agreement which would have the character of a simple truce! All the attempts which have been made during the last ten years towards an agreement have, for one reason or another, completely failed. The difficulty of a solid and fruitful agreement is even more difficult to-day than it was ten years ago. Fight? No one could imagine to-day what would be the definite results, either for the Church or for the State, if a serious quarrel were to break out to-morrow between the two parties in Italy. Catholicism still has strong roots among the population; the State has formidable forces at its disposal: the struggle might completely upset the country by complicating all the problems with which she is wrestling. And suppose it ended by leaving the country still Catholic, or in that total revolt against Rome before which Italy has always recoiled?

The two Italys might repeat with Ovid: *Nec tecum nec sine*. We must not allow ourselves to be deceived by appearances; if the anxiety in which Italy has found herself during the last ten years seems to have all sorts of different causes, the deep-seated one lies in that problem. That is the problem in which the history of the nineteenth century in Italy resulted. Caught between the necessity of transforming herself into a great modern country and her repugnance to breaking with what had been the religion of her ancestors, and which is still her religion, Italy suffered much in the nineteenth century. She tried to escape from the tragic contradiction by ingenious combinations. They helped her to gain time; but the problem presented itself again under different forms on successive subsequent occasions. It represented itself under a new form on the day of the Armistice; and in a guise which required a less formal but more substantial solution than that found after 1860. That is why the crisis this time seems necessarily to be longer and more painful. All the events which obscure it and give the illusion that the question does not exist, or that it is already solved, only aggravate its condition. But what a brilliant period will dawn for Italy if she should succeed in finding an original solution which would at last reconcile her with herself!



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ELECTRICITY IN DAILY LIFE.

By PROTONIUS.

XXII.—THE ROMANCE OF THE ELECTRIC LAMP.

AT the present moment the most interesting fact about the electric lamp is that its price has been materially reduced. However important this may be as an incentive to the fuller use of electric light, it is really a trifling incident in a fascinating evolution marked by many critical changes. When the incandescent lamp first appeared, carbon was the only substance used for the filament. The efforts of lamp-makers were concentrated upon forcing its efficiency as high as possible. Nevertheless, the early inventors, conscious that carbon had its limitations, scheduled almost every known substance in their patent specifications. They had their eye chiefly upon metals, but their hopes lay dormant until, early in the present century, the advance of metallurgy gave us tantalum and tungsten—metals with high electrical resistance and an extremely high melting point.

Tungsten was destined to survive as the ideal material. This metal is produced in the form of fine powder, and the problem of evolving a tough wire out of such powder was like making ropes of sand. The first attempt was made by mixing the powder into a paste with a binding material, forcing the paste through a minute hole drilled in a diamond, and later burning out the binding material. This left a filament of practically pure tungsten and gave a lamp about four times more economical than the old carbon lamp. But the filament was so fragile that it had to be handled with extreme care. The difficulty was finally overcome. By heating the tungsten powder and by subjecting it to tremendous pressure, the particles were made to cohere sufficiently to stand hammering into a thin rod, which in the process became ductile. By this series of processes it became possible to transform tungsten dust into a rod which could be drawn into almost invisible wires with the strength of steel.

This advance, momentous as it was, became merely a stage leading towards a further critical improvement. Hitherto all filaments had been "burned" in a vacuum, but research led to the discovery that if the bulb contained a little inert gas, such as nitrogen or argon, the filament might safely be raised to a much higher temperature and become a much more efficient source of light. Thus was evolved the "gasfilled" electric lamp, now in practically universal use. It has

made electric light about eight times cheaper than it used to be, and its adoption has been accompanied by a steady reduction, in the large majority of districts, of the cost of electricity.

The problem of cheaper electric light was not, however, the only one which the lamp-maker had to solve. He had to provide better electric illumination. The advance in brilliance marked by the change from the old carbon lamp to the latest gasfilled tungsten lamp brought its own difficulties, due partly to the intensity of the light, and partly to the conservatism of the public. To the electrical expert it is an axiom that every lamp should be mated to an appropriate fitting. That is to say, good lighting—light that is adequate, free from glare, and beautiful in its effect—depends on the shade or reflector as much as on the lamp itself. The proper way to use the "miniature sun" of the gasfilled lamp was to place a diffusing screen between it and the eye. Yet the majority of people persisted in placing new lamps in old fittings and subjecting themselves, half unconsciously, to the drawbacks of glare.

Here was another problem. The lamp-maker first met it by spraying the bulb with a special enamel which diffused the light. The sprayed lamp marked a great improvement, but it was not perfection. A material amount of light was absorbed by the enamel, and the surface was difficult to keep clean. Finally, the lamp-maker reverted to the old method of frosting the bulb, but in a new way. He frosted the *inside* of the bulb, so that the outside remained smooth and therefore readily cleaned. And the etching of the bulb was done in such a way that the sharp edges produced by the etching acid were rounded off, leaving the bulb as robust as ever. With this process it was found that the light was so well diffused that it was soft and free from glare, while only a negligible quantity was absorbed. The "pearl" or "pearlite" type of lamp therefore represents in itself a perfect lighting unit. It is available over the whole range of domestic lamp sizes, at the same price as the clear lamps; consequently there is no obstacle to its universal adoption.

Progress never ceases. There is no doubt that further improvements will be made in electric lighting. But for the present the lamp-maker has solved all his big problems and produced a lamp which may well remain a standard article for years to come. And with standardisation has come the first step towards cheapness.

THE POLICE EXPERTS AND ART FRAUDS.

(Continued from Page 494.)

and a perfect specimen of his work. Thereupon the company signed the agreement. A few months later a fire broke out on the premises where the picture was supposed to be. The owner, who was absent at the time, at once sent in his claim. The assessors discovered fragments of the frame and shreds of the painting among the debris, and fortunately a tiny uninjured piece, not more than half an inch square, which had been protected from the flames by an edge of the heavy frame. This was submitted to the laboratory experts. Although it was a delicate and expensive procedure, a picture by the same artist was found, and the owner was finally persuaded to allow the police to make comparative tests. Greatly enlarged photographs were taken of the painted surface and the canvas, and obliquely illuminated micrographs of the brush strokes were also made. The spectrograph (Fig. 2 on page 494) came into play in order to analyse the composition and age of the paint and canvas—and certain chemical tests were made by means of a microscopic particle taken from a spot on the painting which was the same colour as the fragment found by the assessor. These various experiments proved that it was not the insured painting which had been destroyed, and they were so conclusive that the police were ordered to shadow the claimant.

Meanwhile, since the insurance company had refused to pay, an action was begun. Had the case come before a jury, it is probable that the complex scientific methods of the laboratory experts would have failed to convince them; but fortunately one of the detectives discovered that the claimant had stored some bulky cases with a forwarding agent, in readiness for their shipment to America. And there the painting—which had been secretly packed and removed before the fire—was found. The methods used by the experts were, of course, much more conclusive in this case, because the Primitives, as the pioneers in Italian art are named, composed their own colours, and each had not only his own jealously guarded manner of mixing colours, but possessed secrets for obtaining tints which we cannot yet reproduce. These colours not only give distinct and unmistakable results when dissolved and analysed, but have curious fluorescent properties akin to no modern colour.

(Continued overleaf.)



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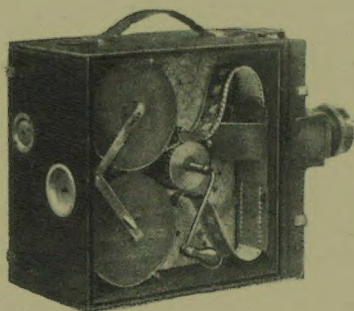
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(Continued.)

Many frauds have been perpetrated by adroit forgers who have produced wonderfully imitated ancient documents: manuscripts aping the style and handwriting of old philosophers; formulæ of mediæval alchemists; palimpsests; autographed volumes, and even Bibles written in monkish Latin on parchment. The work that these manufactured antiquities involved, if applied to honest labour, would probably have earned for the misguided artisans as much money and certainly much honour; but the criminal twist in the brain is a strange thing. Nor are these forgeries always modern. Many are the work of criminals who flourished in past centuries, and the evil they wrought still lives. The laboratories have been called upon to deal with many problems, but none stranger than the case of the fraudulent autographed first editions of Jean Jacques Rousseau, Voltaire, and Balzac's writings. A well-known collector had acquired these treasures for half a million francs. He became involved in great financial difficulties a year later, and offered these priceless works to the State library. By a strange chain of circumstances, the curator became suspicious of the books, and demanded that they should be submitted to a commission of experts. This was done, but the experts disagreed.

Because of the experts' contradictory reports, the police laboratory experts were then requested to examine the books. Their mode of procedure, as usual, disregarded the artistic point of view completely. Ink and paper were analysed, and found modern (Fig. 1 on page 494). The audiotape, which I have elsewhere mentioned, was employed first of all, and gave a totally different whistling note for seventeenth- and early eighteenth-century ink and that which had been employed in the manufacture of the forged volumes. Chemical analysis showed the paper to be of different linen from that used formerly, and the ink of the autographs contained traces of aniline colouring. Now, aniline dyes were obviously unknown in the days of Rousseau and Voltaire! A *juge d'instruction* was nominated, and an investigation begun. The volumes had passed through many hands, but at last a most elaborate and complete installation for printing, engraving, and reproducing photographically books as they left the publishers two centuries ago was discovered in a tumbledown building on the outskirts of Paris. The presiding genius was a man of sixty,

who had spent half a lifetime drifting from prison to prison. His organisation for ageing the paper and binding was wonderful, and some of the methods used must have taken years to complete. He had amassed a fortune, it is true—how much was never ascertained, for most of it was in banks and property abroad—but in France alone he possessed many houses; yet he never enjoyed his wealth, for his work had become a mania—art for art's sake—and he died before the trial. The composition of the paper, and of the ink, in written or printed forgeries, are the two great stumbling blocks to criminals. The laboratories have definitely classified all known compositions of paper, ancient and modern, and all inks, whether those used for writing or printing. Even the appearance under the microscope of every known species of pencil has been photographed and formulated ready for use. The way of the transgressor is indeed becoming obstructed with thorns, and their name is Science.

THE FINE ART OF COLLECTING.

(Continued from Page 518.)

It took a dozen men or more to handle it. Leaving Canton with a crew of twelve Englishmen and thirty Chinese, under Captain Kellett, she set sail in spite of opposition from the Chinese authorities. Rounding the Cape, she reached St. Helena on April 17, 1847. The Chinese crew, unwilling to proceed further on this Columbus-like adventure, wanted to go back, but were finally induced to proceed. The *Keying* crossed the Atlantic, where she experienced very bad weather, and put into New York. Crossing the Atlantic again, the *Keying* finally came to Gravesend. The voyage lasted seventeen months—actually 477 days from Canton. The vessel was for some time on exhibition. We do not know her subsequent history. Fig. 3 (on page 518) illustrates the *Keying* "as she appeared off Gravesend on March 28, 1848," and is from a lithograph published by Rock Brothers and Payne, Walbrook, London, May 20, 1848.

A new and great interest is at the present moment being paid to the earlier mail and passenger steamships of the nineteenth century. The Macpherson Collection is especially rich in these. A volume edited by Captain H. Parker and Frank C. Bowen, both recognised authorities, has just been published. It deals with a later but really fascinating chapter in

sea history. It depicts the celebrated *Great Eastern*, termed "the sea's most historic failure," and it records a pictorial illustration of the *Britannia*, the Cunard Line paddle-steamer, the pioneer ship of that celebrated fleet which was built in 1840. She was cut out of the ice at Boston, the citizens assiduously working to make a road seven miles through the ice to give her a free passage to the open sea (Fig. 1, page 518).

It is Dickens who holds a mirror to Chatham Dockyard in "The Uncommercial Traveller," wherein he tells of the *Achilles*, the new iron armour-plated ship being constructed, with her "twelve hundred hammerers, measurers, calkers, armourers, forgers, smiths, shipwrights . . . all these busy figures between decks dimly seen bending at their work in smoke and fire are as nothing to the figures that shall do work here of another kind, in smoke and fire, that day . . . when the scuppers, that are now fitting like great dry thirsty conduit pipes, shall run red." It is quite indicative of the note of evolution that the great writer passes, as he terms it, "to the ships again, for my heart as to the Yard is where the ships are. I notice certain unfinished wooden walls left seasoning on the stocks, pending the solution of the merits of the wood and iron question, and having an air of biding their time with surly confidence."

To the collector there are quite a number of early lithographs and aquatints which should be sought, such as the *Vernon*, an early Indianman; and as to packet-boats, there is the *Margate packet Victory*, and that of the Isle of Man, the *Ben-My-Chree*. The Peninsular and Oriental has its *Hindustan* steaming out of Southampton to India, and other earlier prints desirable are those of the *Bentinck* and the *Iberia*.

In conclusion, let no one be disheartened at finding amongst the plethora of highly-coloured maps offered him that few are really suitable to the collector. Or if he encounters a fleet of impossible aquatints and lithographs sailing under false colours, he may take to heart the adage that "imitation is the sincerest form of flattery." But there are splendid examples hidden away which will offer him delectable pleasure. There are still niches that he can make his own. The steamship has not quite won the distinction in this direction of fabrication that the sailing-ship has made. A parting word of advice: eschew soiled or damaged examples. In this particular field of collecting, really perfect examples are a necessity if they are to be deemed of permanent value.

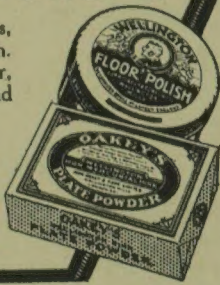
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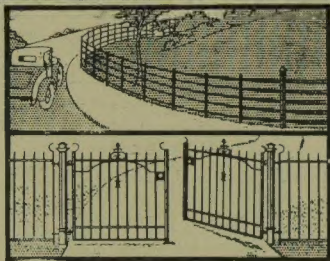
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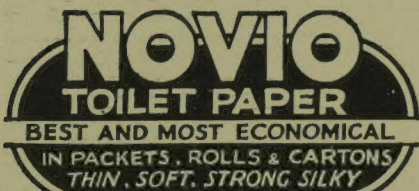


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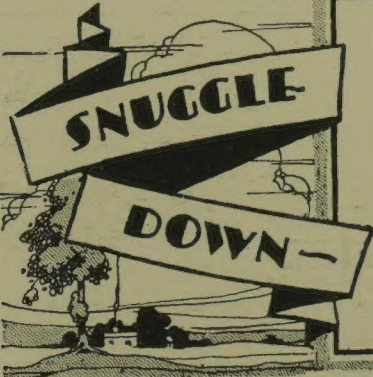
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